



# Catholic Church of the Sacred Heart of Jesus Podgorica

Experience of Sacral and Brutalist Architecture





# Editor's word

On the occasion of the 50th anniversary of the Catholic Church of the Sacred Heart of Jesus, it is my great pleasure to present the contents of the publication.

The church was built in 1969 in former Yugoslavia and it represents one of the most important buildings designed and built in brutalism. It is the work of Croatian architects Zvonimir Vrkljan and Boris Krstulović.

Brutalism derived its name from the French word "concrete brute", which means "rough" concrete, a term used by French architect Le Corbusier to describe cast concrete with visible traces of formwork used on most of his buildings. His basic idea of designing, using and building was characterized by the functionality of the structure and, most of all, he expressed strong lines and facades without ornamental design, i.e. decorative details. Hence, the objects

were given a simple, unusual shape made using concrete, which is why they have remained impressive to this day.

In 2018, the Catholic Church of the Holy Heart of Jesus was recognized as one of the most important works of architecture in former Yugoslavia, so its photographs were exhibited at New York's most famous Museum of Modern Art - The Museum of Modern Art, MoMA.

In the same year, the photographs, as well as some drawings of the church, appeared at Days of Oris in Zagreb. Days of Oris is an international architectural symposium organized by Oris magazine and Oris House of Architecture.

The common goal of the authors of the publication was to concentrate on its architectural and construction achievements, its natural and artificial illumination, and how important the

structure of the church itself is to believers who visit it. It is, indeed, one of the most significant sacral objects in Montenegro.

I would like to thank everyone who contributed to the issuance of this publication. Special thanks to the architect Zrinka Barišić Marenić, Ph.D, from the Faculty of Architecture of the University of Zagreb on her great contribution and excellently written work on the church, which she published in the Scientific Journal of Architecture and Urban Planning "Space" in 2015, which is an integral part of this publication.

Respectfully,

M. SC. C. E.. MARIJA V. IVEZIĆ

† A † D † MCMLXIX †

# The Spiritual Experience of Sacral and Brutalist Architecture

DON VIKTOR GANC

The Church of the Sacred Heart of Jesus is one of the first and most beautiful examples of sacral brutalist architecture in the Balkans, and it also helps us to enter into the mystery of faith with specific spiritual experience. It is the first church in the Balkans which, both architecturally and liturgically, was designed and later built after the Second Vatican Council (1962-1965). For a spiritual experience of it, all credit goes to the whole team of architects and liturgists who worked together to project the architectural design of the church.

The main approach to the church is a wide and long staircase, which represents the first contact with the church. Prior to the staircase and entrance to the church, there are two large plateaus that allow the Holy Mass, or any other event (a gathering of young people, a gathering of children, an exhibition, etc.), to be held outdoors. Before entering the church, there is a sculpture of "St. John Bosco", the founder

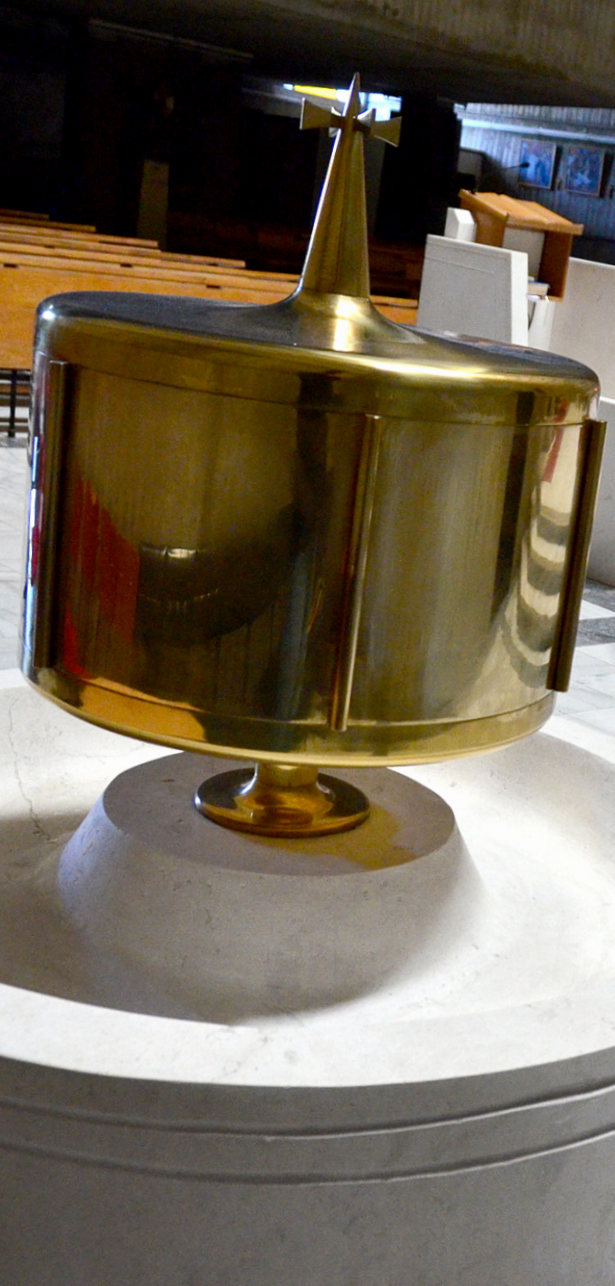
of Salesians who takes care of the parish and Don Bosco Centre in Podgorica. The small wooden door upon entry into the church tells us the very symbolism of the Gospel: "Enter through the narrow door! For wide is the door and broad is the road that leads to destruction, and there are many who go through it." (Mt 7.13).

As we enter the church, we slowly discover its beauty. The low and long concrete slab (gallery) does not allow us to immediately discover the size and height of the church room itself. We discover them gradually, because life is certainly a secret to be discovered slowly, concisely, with a lot of faith in ourselves. The centre, as every centre, reveals the most. Reaching the central part of the church, we discover the altar, the ambo, and then the very statue of the Sacred Heart of Jesus, to which the church is dedicated. The cross behind the altar with its size and daylight only indicates that we must look up. Light coming from above penetrates

the skylight and gives us the sense of mysticism, peace, hope and prayer that we have daily before God.

Standing in front of the altar, we finally absorb all of its inside beauties. The Stations of the Way of the Cross on the sides of the benches St. Anthony and St. Nicholas at the front door of the church are illuminated.

Its shape is both externally and internally designed as a ship. The shape of the ship reminds us of the Old Testament story of Noah Arc, and in the New Testament the ship is a symbol of the Church which, with a good captain behind the helm on the deck, sails to the eternal port of peace. The interior is designed in a way that everyone can concentrate on those essential things during the Holy Mass. It must not be overlooked that the altar, the ambo, the Tabernacle, the Baptistery are made of white marble that blended in with the ship itself and its navigation.



The altar is placed in the middle of the presbytery. The priest leading the Holy Mass has a central position and ability to see all believers who also have a sense of belonging around the table of Jesus, just as the apostles at the Last Supper described in the Bible. On the front of the altar is the inscription "SI DEVS EST PRO NOBIS QVI EST CONTRA NOS", translated as "IF GOD IS WITH US, WHO CAN BE AGAINST US?"

The ambo, as a symbol of the place of reading and interpreting the Word of God, is even closer to the believers who attend the Holy Mass. A place for preaching (pulpit) of the old churches was high so that all the believers could hear the preaching of a priest. The Catholic Church of Sacred Heart of Jesus has an excellent acoustics project, so the priest's position in it is in a great place, which gives the opportunity for excellent interaction with believers. The ambo has a large Pax sign, with the addition of the Greek letters  $\alpha \Omega$  meaning: "Jesus Christ is the beginning and the end (of the world)".

On the other side of the altar, there is a tabernacle, or the place where something sacred is stored, which is also of great

importance to believers. The tabernacle holds the consecrated bread (the bread that is transformed into the body of Jesus at the Holy Mass) which serves for the communion of believers. The tabernacle is of gilded cylindrical shape, set up on a white marble pedestal. It opens on two sides, the front (toward believers) and the back. The front is used for the purposes of the Eucharist, and the ciborium with sacramental breads is kept on the back. The inscription in Latin is engraved on the marble stand: "CORPVS MEVM", which means: "MY BODY".

A place for baptistry was also designed in the church, located at the currently positioned choir, on the side of the presbytery, on the way to the sacristy. The churches used to have a baptistry in front. Their position at the time had the symbol of becoming a member of the church community through the baptistry and the cross.

The baptistry in the Church of the Sacred Heart of Jesus was designed in the church itself, which always reminds us of our baptism and brings us back to the beginning of our faith. Also, the upper

part of the baptistery is made of gilded material, placed on a stand made of white marble, bearing the Latin inscription EGO TE BAPTIZO IN NOMINE PATRIS ET FILII ET SPIRITUS SANCTI and, on the other side, in croatian language: "... I BAPTISE YOU IN THE NAME OF THE FATHER AND OF THE SON AND OF THE HOLY SPIRIT".

A few years ago, confessionals in the church, located on the sides of the church, just after entering it, were renovated. They are not part of the church's original project, but their appearance and functionality fit in it.

With the original church project, the choir was to be placed on a gallery. The choir is now located near the baptistery and thus has a great role to play, as it has contact with both the altar and the faithful.

**The Church of the Sacred Heart of Jesus is a very successful architectural project in terms of symbolics, sacral space and practical solutions, which make it possible for us all to feel comfortable.**







# The **authors** of the project of the Catholic Parish Church



**Zvonimir Vrkljan** (26.07.1902-08.02.1999) was a Croatian architect and author of the project of the Catholic Parish Church in Podgorica (1963-1969). He graduated in architecture in 1924 from the Technical High School in Zagreb. He worked at the Ignjat Fisher's Architectural Bureau from 1926, and he was a full professor at the Faculty of Architecture in Zagreb (Department of Structural Engineering) after retiring in 1972.

He specially designed buildings for education: the Academy of Commerce on Petar Krešimir IV Square (1931-35; today the Ministry of Defence), the Women's High School of the Sisters of Mercy on the Sava Road (1937-40; today the Faculty of Teacher Education and the XI Gymnasium), and the complex of buildings of the Veterinary Faculty in Heinzelova Street in Zagreb (1936-62), thus achieving a paradigm of modern

scientific and educational institutions in Croatia. He also implemented in Zagreb a number of residential buildings of emphasized functionality and comprehensive expressiveness: Vlačka 76 (1930), Novakova 7 (1933-34), Pod zidom 5 (1937-39) and Kvaternikov trg 12 (1939-40), as well as Bauerova 21 (1940-42). He restored the Benedictine monastery in Zadar (1961-70) and adapted the Golubovec castles near Donja Stubica (1978-88) and Januševac near Zaprešić (1985-88).

He wrote articles on the history of the Faculty of Architecture and its professors (From the History of Zagreb Technique) and compiled them in the book *Memories* (1995); he was the author of the textbooks *Building Structures I and II*. He received the "Vladimir Nazor" Award for Lifetime Achievement (1977).



**Boris Krstulović** (09.02.1932-28.11.2014) was a Croatian architect and author of the project of the Catholic Parish Church in Podgorica (1963-1969). He graduated from the Architectural Department of the Technical Faculty in 1956. In 1962 he became an assistant at the Civil Engineering Institute (under Professor Z. Vrkljan) at the Faculty of Architecture, Civil Engineering and Geodesy. After independence of the Faculty of Civil Engineering in Zagreb in 1963, he worked there as an assistant to Professor R. Nikšić, and from 1972 as an assistant professor. From 1977 to 1991, he worked at the Construction Institute in Zagreb.

Using modern materials and innovative and dynamic structural elements, he accomplished many functionally harmonized residential buildings in

Zagreb, Crikvenica (1965) and Varaždin (1982):

- Residential complex in Zelengaj (1971)
- Residential buildings in Sveti Duh (1991)
- Living space in Dežmanov Prolaz (2003).

Plastic treatment of volume is especially emphasized in the construction of commercial and public buildings:

- Administrative and Propulsion Complex of Elektroslavonija in Osijek (1967-71)
- Elektra office building in Varaždin (1974-77)
- Varaždin Business and Propulsion Complex (1978-88).

He was the winner of the “Vladimir Nazor” Award for Lifetime Achievement in Architecture and Urban Planning (2009).





EGO TE BAPTIZO

IN NOMINE

PATRIS

ET FILII

ET SPIRITUS SANCTI

# Catholic Parish Church in Podgorica (1963-1969, ZVONIMIR VRKLJAN AND BORIS KRSTULOVIĆ)<sup>1</sup>

PH. D. ZRINKA BARIŠIĆ MARENIĆ

The most significant contribution and the biggest surprise within the theme of this work is certainly the realization of the Catholic Church in Podgorica by Professor Zvonimir Vrkljan<sup>2</sup> and his assistant Boris Krstulović.<sup>3</sup> Conditionality of the church construction is influenced by the little known fact that the Albanian population of the northern outskirts of Podgorica is predominantly Catholic. "The location of the church is on the eastern outskirts of town towards Čemovsko polje and the hills, where highlanders of Albanian nationality can be encountered. When designing the building, I came to the point of view (Professor Vrkljan agreed with this) that today our relationship with the church is a private matter of an individual. External attractive captivation is therefore unfounded. It was necessary to create a specific space that would be quite different from all the spaces used in everyday life. It means a 'broken space' that has no relation to anything existing

in the surroundings because, in my opinion, a believer goes to church primarily to 'escape' from reality that surrounds him or her. That means he or she needs to come across a very unusual interior space", are the words of architect Boris Krstulović.<sup>4</sup> A logical choice of material is reinforced concrete, which allows the formation of a monolithic reinforced concrete shell with a visible lost formwork in the exterior. This was before the oil crisis, when the physics of the building did not impose necessary outer layers for better thermal insulation of the building. The expressiveness of rough reinforced concrete form dominates the exterior of this extraordinary creation, creating a 'house-sign', a highly charged symbolic meaning in an area where the Roman Catholic population is minority. "With its aversion, it associates with the first inferior Christian objects (secret, as well as the public ones) as an expression of negation

of earthly brilliance", architect Boris Krstulović would state.<sup>5</sup> The spatially-functional organization develops linearly in floor plan along a longitudinal axis north-south, with progressive gradation from both end approaches<sup>6</sup> to the culmination of the sanctuary, as evidenced in the vertical composition of the frame. The space of the access square, longitudinal sacral space with a crystalline form above the altar, a reinforced concrete truncated bevelled pyramid with an oculus through which zenital illumination emphasizes the altar and the cross on the rough reinforced concrete wall behind the sanctuary appear linearly inside the elongated rectangular dimension. Compositionally, it is a counterpoint to the slope of the main elongated prismatic corpus, which surrounds the space of the atrium and the parish and educational premises behind the sanctuary. At the time of its construction, it was the first church in the Balkans the interior of

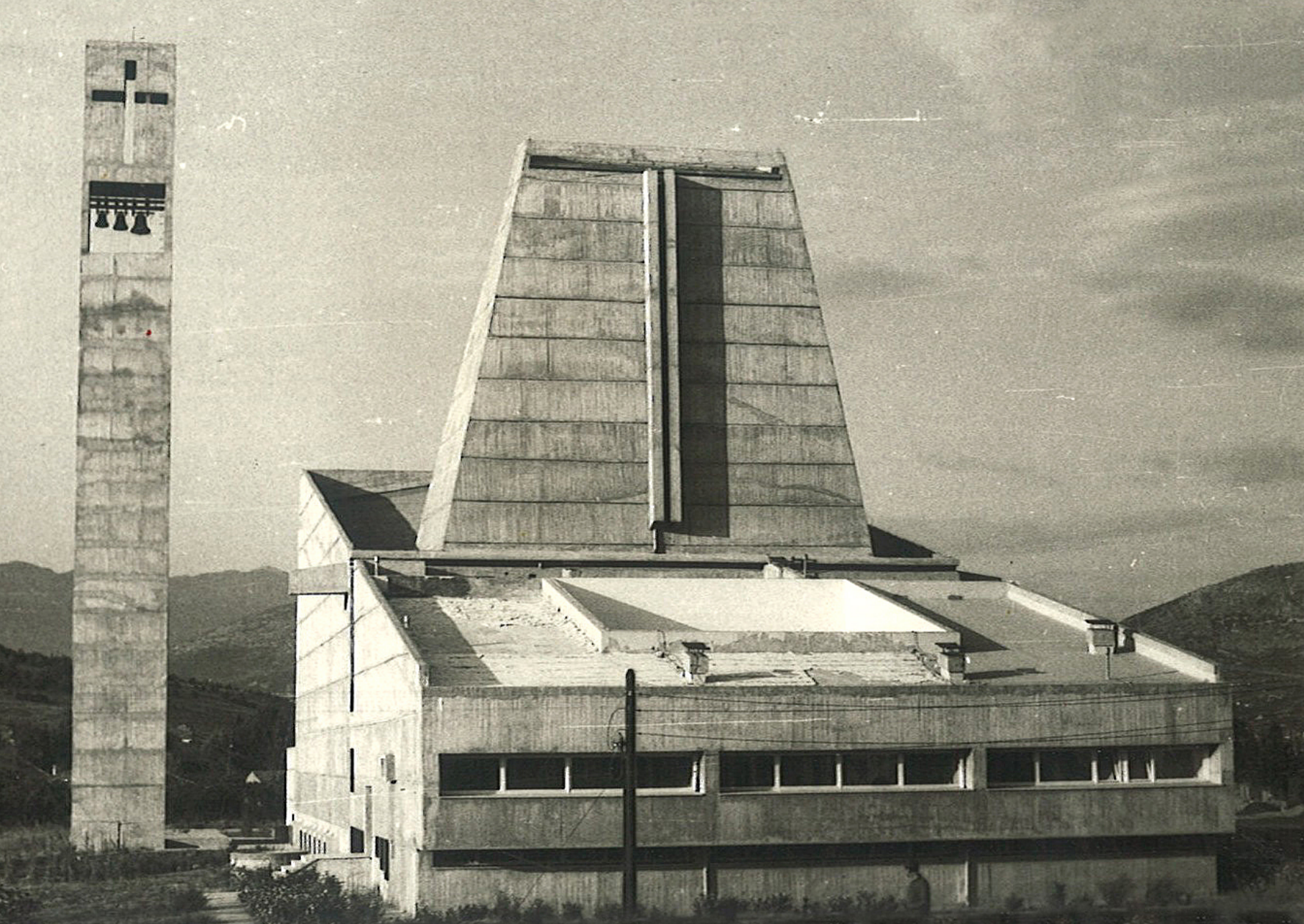


which was designed in accordance with the liturgical guidelines of the Vatican Council reform. Furthermore, there is a large sports hall on the lowest floor, a zenithally illuminated entrance to the parish premises with a library and several classrooms where the Parish offers education on afternoons and weekends on a volunteer basis.<sup>7</sup> The vertical of the bell tower tangents the access space of the square and, with its sloping truncated pyramidal structure, dominates the silhouette of that part of the city. By generating social and sports content, a specific 'plus programme' has been formed which, with its current position - a recently completed mini-ring road, transforms the achievement of Zvonimir Vrkljan and Boris Krstulović into a significant landmark of the eastern part of Podgorica. In my opinion, human ratio accepts the whole environment in an abstract way and reproduces it schematically. It is no wonder that pyramids appeared as symbols five thousand years ago. And today, I think, we try to primarily discipline the form into stereometric shapes. "If you put

everything in the same plane, you imitate a pure, abstract form", says architect Boris Krstulović in his interview.<sup>8</sup> This monolithically constructed building, by selecting one material, is referenced by drywall stone structures of traditional architecture in the Adriatic coastal area, with stone slabs in the cover. The fine-grained horizontal structure of coarse, plank, lost formwork is also a reference point of this traditional weft with its monolithicity. The accentuated horizontal strokes of the vibrating series of timber formwork<sup>9</sup> counterpoint the bevelled volumes and balance the overall composition. On the other hand, the referentiality in international trends is read in brutalism which, in this performance, received the most representative showpiece in the Croatian modern architecture.<sup>10</sup> At the same time this piece of work was realized, prof. Zvonimir Vrkljan and his second assistant, Valdemar Balley, accomplished a one-room hall in rough concrete-brute construction in Zvonimirova Street. The fact that all the aforementioned architects work at the Department and the Institute

for Building Structures, surpassing the present Department of Architectonic Structures and Civil Engineering at the University of Zagreb, explains the boldness of such large-scale spatial solutions as well as the sovereign handling of reinforced concrete structures. In the context of these achievements, the Catholic Church in Montenegro reached some sort of peak. Architect Boris Krstulović would, in his next independent realizations of industrial and administrative circuits of Elektroslavonia in Osijek (industrial complex 1967-1971 and computer-dispatching centre, 1973-1978)<sup>11</sup> and Slavonski Brod (administrative-office building, 1972), continue the opus of excellent achievements characterized by large-scale prismatic buildings in raw concrete construction.<sup>12</sup> Constructive possibilities of the applied material are most visible on the outskirts of Osijek, in Zeleno Polje. The poetic image of the outskirts of the Slavonian city was characterized by the plain of cereal fields where, in the contact zone of urban and agrarian







area, a rough contrasting, floating structure, a cantileverly pointed raw concrete, derived corpus of the computer-dispatching centre of Elektroslavonia dominated. Symbolic meaning is multifaceted. Focusing again on the Catholic Church in Podgorica, it is the best realization of sacral architecture of that time achieved by Croatian architects during the socialist period of 1945-1990. It is extremely unusual for this typology to culminate in the work of Croatian architects outside Croatia. And perhaps this fact, as well as the location on the outskirts of the capital of Montenegro, allowed the creators complete freedom: a dynamic composition of geometric bodies (prisms laid in a slope and bevelled truncated pyramids, which reinterpret the height accent of the traditional dome and enable zenithal illumination) and materialization with reinforced concrete with a monolithic structure articulated by a bareraw concrete structure. Let us not forget that during the period of socialism sacral architecture almost completely disappeared from professional production in Croatia. The never completed church

was being built in Zagreb, that is, upgrade and superstructure of the crypt of the Franciscan Basilica of Our Lady of Lourdes in Zvonimir Street (1934-1935) following the project of prof. Vrkljan and his assistant Balley, 1965-1971<sup>13</sup>, and the church of St. Cross in Sziget by Emil Seršić and Matija Salaj, 1971-1982. The same authors realized the Franciscan high school in Samobor from 1967 to 1968.<sup>14</sup> With several sacral works by architect Zvonimir Vrkljan, architect Sena Sekulić Gvozdanović accomplished the restoration of the parish church in Voćin in 1971. In Split, architect Frane Gotovac performed a significant modernist realization of the Parish Church and the monasteries of St. Joseph on Sukošan (1967-1971), and then the Chapel of St. Cross in the cemetery in Omiš (1971). St. Peter's Concathedral in Split was realized 1979-1983. Architect Ivan Prtenjak realized a dimensionally modest but spatially complex achievement of the Parish Centre in Boninovo in Dubrovnik, on the location between three churches from 1977 to 1980.<sup>15</sup> and professor Boris Magaš realized the church of St. Nikola Tavelić in 1986 in Rijeka. In the context of

a few realizations mentioned above in the Socialist Republic of Croatia, the Catholic Church in Podgorica represents an extraordinary sacral achievement of Croatian modern architecture. It has been unjustifiably forgotten in the Croatian professional and scientific literature. However, by the choice of the editor, that is, curators Adolf Stiller and Bojan Kovačević, the work of prof. Zvonimir Vrkljan (and mistakenly omitted co-author Boris Krstulović)<sup>16</sup> was included in the presentation of Montenegrin architecture at an exhibition in Vienna in 2013: Montenegro: Contrast Land-schaft, Architecture Kontext/Contrast Landscape, Architecture Context, and thus presented to Montenegrin and Austrian professional public for the first time.<sup>17</sup> Design and selection of the material create a comfortable atmosphere, based on post-Corbusier discourse in sacral architecture after (church in, author's comment) Ronchamps; there is a strong, mystical atmosphere, especially in the interior, like the one inside the cave, which is enhanced by natural (zenithal, author's comment) illumination.<sup>18</sup> Extraordinary

sacral achievement, which is mostly used today by the Croats and Albanians of Catholic religion, is unjustifiably forgotten because it is still actual today, with reference to contemporary aspirations. Influences of this work can also be read in Montenegrin architecture, in the already mentioned work of the Memorial House in Kolašin in Montenegro, by architect Marko Mušić (1976), in raw concrete construction, dynamic composition and plasticity of forms, as well as zenithal interior lighting.

- 1 The project was realized at the Department of Structural Engineering at the Faculty of Architecture in Zagreb, headed by prof. Zvonimir Vrkljan. Today: Roman Catholic Church of the Sacred Heart of Jesus.
- 2 Zvonimir Vrkljan (1902, Vukovar - 1999, Zagreb). He graduated from the Technical College in Zagreb (1924). He worked in the studio of I. Fischer 1926-1930. He was a professor at the Faculty of Architecture at the University of

Zagreb from 1928 to 1972. His work includes professional oeuvre, pedagogical work, research work in the field of the development of building constructions and standardization, and a publicistic oeuvre to accompany the development of the profession, faculty and contemporaries. He published several issues of university scripts and textbooks 1946-1986. He was laureate for the Lifetime Achievement Award "Viktor Kovačić" (1969) and "Vladimir Nazor" (1977). He has been a member of JAZU since 1988. The most significant works: 1931-1938 State High Schools Assembly, Zagreb (performance, today Ministry of Defense of the Republic of Croatia); 1934-1938 District Employee Insurance Office (OUZOR), Osijek (+ B. Auer, performance, today Health Centre); 1937-1939 Women's Real Grammar School of the Sisters of Mercy, Zagreb (performance of stage one); 1937-1942, 1946-1952 Main Assembly of Veterinary Faculty, Zagreb (performance, accompanying pavilions 1957-1962; Institute and Clinics for Obstetrics and Surgery + N. Kuèan); 1940-1942 Residential building, Bauer Street, Zagreb (performance); 1963-1969 Catholic Parish Church.

- 3 Dr.sc. Boris Krstulović (1932, Split - 2014, Zagreb). He graduated from the Faculty of Engineering in Zagreb in 1956. Until 1957, he worked at the Architectural Design Bureau "Žerjavić in Zagreb", and was an associate at the Institute for Architectural Compositions (Prof. A. Albini) from

1958. He was an assistant at the Department of Structural Engineering (Prof. Z. Vrkljan) at the Faculty of Architecture and Civil Engineering and Geodesy from 1962. He was an assistant at the Faculty of Civil Engineering in Zagreb as of 1963 (Prof. R. Nikšić), and from 1972 he was Assistant Professor. From 1977 to 1991 he worked at the Institute of Civil Engineering in Zagreb. He received his PhD in 1987 ("The Specific Principle of Constructing Flexible Architectural Spaces"), in 1988 he was elected to the position of full professor. He was habilitated in 1972 at the Elektroslavonija unit in Osijek. He was laureate of the Republican Awards "Borba" (1972 and 1978), the annual "Vladimir Nazor" Award (1972), the annual "Viktor Kovačić" Award (1979), the "Zagreb Salon" Award (1979) and the "Vladimir Nazor" Lifetime Achievement Award (2000). The most significant works: 1959, Residential building, Zagreb (performance); 1960. Residential building, Zagreb (performance); 1963-1969 Catholic Parish Church in Podgorica, Montenegro (with: Z. Vrkljan, performance); 1967-1978 Elektroslavonija, industrial assembly and computer-control centre, Zeleno Polje, Osijek (performance); 1972 Administrative and business building of Elektroslavonija, Slavonski Brod (performance); 1972 Interior of the old part of the Hotel Argentina, Dubrovnik (performance); 1974-1975 Elektra Office Building, Varaždin; 1984-1997, Residential building, Zagreb (performance). Krstulović, 1984; <http://www.arhitekti-hka.hr/>

- 4 Krstulović, 1984: 380
- 5 Krstulović, 1984: 380
- 6 North main entrance, across the hall for the believers and secondary south entrance of the parish courtyard structured around the atrium.
- 7 Stiller, Kovačević, 2013: 126-127
- 8 Krstulović (interview conducted by: Bešlić, Galović, Mucko, Penezić, Rogina, 1999), <http://www.d-a-z.hr/hr/aktual-na-tema/osvrsti/interview-boris-krstulovic,55.html>
- 9 The analogous structure of horizontally accentuated strokes of the plank formwork was also performed at the never completed Church of Our Lady of Lourdes in Zvonimir Street, the realization of Zvonimir Vrkljan and Valdemar Balley in 1965-1971.
- 10 They were preceded by the construction of the Dinamo stadium in Zagreb (1946-1954, 1962, Vladimir Turina, Franjo Neidhardt, Dragan Boltar, Eugen Erlih). In the context of concrete brut architecture, the forgotten achievements of the Market in Slavonski Brod (Vladimir Turina) and the upgrading of the Church of Our Lady of Lourdes in Zagreb (1965-1971, Zvonimir Vrkljan, Valdemar Balley), the Trešnjevka Electronic Computer Centre in Zagreb (1969, Vjenceslav Richter, Kruno Cimprešak, Maja Šah-Radović) and the Health Centre in Labin (1963-1969, Mladen Vodicka, a competition project with Boris Magaš). In the 1970s, with the accomplishments of Boris Krstulović, the Elektroslavonija assemblies in Osijek and Slavonski Brod were marked by the stripped concrete structure of the City Library in Karlovac (first stage, 1971-1976, Mladen Vodicka), Bread and Cake Bakery in Makarska (1972, Milan Šosterić), Hotels Crystal and Zagreb in Poreč (1970, Juliet De Luca), etc.
- 11 1967-1978, Boris Krstulović, Elektroslavonija, Industrial Assembly and Computer Dispatch Centre, Osijek.
- 12 Positioning of social contents by the entrance, zenithal illumination of the production-warehouse part and stereotomy of reinforced concrete monolithic structure of the corpus of the large-scale computer-dispatching centre are experiences that architect Boris Krstulović certainly draws from the realization of the Catholic Church in Podgorica.
- 13 In the central part of the arch of Zvonimir Street, Slovene architect Jože Plečnik designed the Franciscan Basilica of Our Lady of Lourdes 1934-1935, but only the crypt was realized. In 1965-1971 the entrance annex and the new corpus of the church, one-room hall in concrete-brute, were performed.
- 14 Šegvić, 1986: 194
- 15 Šegvić, 1986: 252
- 16 The latter sacral realization is a step forward in terms of authorial deliberation and is certainly a forerunner to Magashev's last realization of the Dominican church at Ivaničgrad/Vukovar in Zagreb, achieved by third-order panels. A completely inverse situation in the field of sacral construction will prevail after the establishment of an independent Croatia in 1990, when the number of realizations in just a few years will surpass the entire previous period. The quantity of the achievements, unfortunately, resulted in an inversion in the quality of these realizations, of course - with honorable exceptions
- 17 Stiller, Kovačević, 2013: 126-127. The exhibition was held in Vienna 19.09 – 15.11. 2013.
- 18 "Formensprache und Materialwahl lassen and angenehmer Weise den Post-Corbusier' schen Discourse im Kirchhenbau nach Ronchamps durchscheinen; besonders im Innenraum wird eine starke, höhlenartigmystische Stimmung spürbar, die durch den Lichteinfall verstärkt wird". [Stiller, Kovačević, 2013: 126-127, author's note].



# The “broken” warm concrete space

MSC. CIVIL ENGINEER MARIJA IVEZIĆ

Catholic Church of the Sacred Heart of Jesus (1967-1969), built in the period of former Yugoslavia, is a representative of an architectural style in Montenegro called brutalism.

The presence and application of brutalism in former SFRY primarily appeared for economic reasons. In those years, when the church was designed and built, a large number of facilities had to be built and, at the same time, their construction had to be complied with efficiency and cheapness. For these reasons, many engineers agreed that all these conditions were best met by concrete, i.e. reinforced concrete. Reinforced concrete was used in 95% of cases. Engineers of that time believed that concrete was eternal; only later it would be shown that it had its own period of validity. With the use of concrete, not much thought was given to thermal conditions, while concrete was also the supporting element of the construction and facade view of the building.

Therefore, a title of the first representative of brutalism in Montenegro, then Titograd, present-day Podgorica, can freely be “handed over” to the project of the Church of the Sacred Heart of Jesus. If we look back at the very construction of the church, which was made using the principle of concrete, we will notice that the architects at that time wanted to make an object that would be eternal, characteristic, mysterious. Today, 50 years later, many people understand and accept it exactly as it was projected then in 1967-1969.

The location of the plot for the construction of the church was determined by then Urban Planning Institute of the Municipal Assembly of Titograd, which was located on the green belt that is fenced by the Adriatic Highway on one side and by a street connected to the residential settlement Konik on the other.

With the project task, it was necessary to design the Catholic Parish Church for approximately 800 believers, a special place for the choir to receive the organ. Along with it, a sacristy, a parish office, classrooms for religious education, apartments for priests, etc., were to be provided. The lobby and ground floor of the church and the parish flat are elevated by several steps, so that the building gets urbanistically dominant position and, at the same time, it enables good ventilation of the crypt and basement below the parish flat. The bell tower stands separately giving a special impression to the whole building by its height. The church and the parish flat were conceived as a single concrete and reinforced concrete structure which, after the formwork has been removed, remains unplastered and untreated. Roof panels are reinforced concrete panels plated by insulating material that prevents water from penetrating. Throughout the whole



“broken” space the reinforced concrete structure was consequently installed so that all roof panels were made of reinforced concrete.

By reflecting on geometry of the church, the architects designed it in the form of an elongated rectangle, with a combination of geometric bodies of the prism laid in the slope of bevelled truncated pyramid. Zvonimir Vrkljan, author of the church project, is known for his projects being characterized by clear functional bases and strict constructive discipline of built elements.

Harmonic volume and measured formation harmoniously reflect the functional-constructive context with constant presence of the principle of creating a non-random architecture.

Reinforced concrete walls of the church were poured by formwork 12-14cm wide and 1.70m high. Roof panels are poured (concreted) in longitudinal and transverse directions at an angle of 13°

As brutalism in architecture is known as bare concrete, the church has its final processing (interior and exterior) of

imprinted formwork.

This style of construction and the use of concrete was generally not satisfactory to the environment and is considered to be grey, rough, inhumane, cold construction style. However, over time, buildings such as the Church of the Sacred Heart of Jesus can be viewed in a completely different way – as exciting, direct, brave, warm and, above all, valuable for architecture and construction of Montenegro.

Time leaves a mark on such structures, which were made in the style of brutalist architecture, so it is necessary to do professional protection of the building with adequate materials, which was done a few years ago, when facade of the church was protected and covered with the concrete protective layer.

Taking into account the way of construction at the time, the use of one characteristic material in the construction and, at the same time, years of their maintenance with small investments, the buildings built in brutalism manage to retain uniqueness and recognition in architecture and construction.







# Illumination of the Catholic Parish Church

BSC. ING. OF POLYTECHICS BOJANA SEKULOVIĆ

The brightest minds of mankind observed a long time ago that the divine and mystical nature of light is best felt and perceived in sacral buildings.

One such is the Catholic Church of the Sacred Heart of Jesus. It's a typical but also unique example of a brutalist building. In the sea of today's modern exhibits, glass cubes, huge marble, the aforementioned church manages to stand out with its shape and line.

Its uniqueness is largely a result of the presence of natural light. With the main functional role of light, the sun's rays are also a kind of natural decoration here. The play of light on a cold concrete wall creates a unique visual effect. In a subtle way, light further draws attention to the already impressive raw and unworked concrete emphasizing its firmness and, on the other hand, the beauty of the simplicity of brutalism.

Entering the main door of the church, until some point, we are deprived of the natural light coming through the slanted part of the pyramid. As we approach the central part of the church where the altar and the ambo are located, the light becomes more intense. Symbolically, this represents a path of enlightenment and sublimity, which takes time and firm faith.

In the church dedicated to the Sacred Heart of Jesus, the zenith system of illumination is represented. It is one of the principles of illumination of interior space. It is introduced by the use of glass openings on the surface of the object through which beams of light go down. It is important to note that zenith illumination is at least twice as intense as that which enters laterally through the same glass surface through vertical windows. The light coming from above diffuses more evenly across the space,

giving it a divine and mystical note.

From the psychological point of view, the Sun shines on us from above, which is why this kind of light entry is more natural and acceptable to us.

This kind of lighting makes the space exude a spiritual, mystical and sublime atmosphere.

In contrast to natural light, the role of the artificial light in the aforementioned church is largely focused on the illumination of the exhibits. Following the latest technologies in the world of lighting, lamps found in the church are LED light sources. With their application, a longer lifetime of the lamps, as well as energy savings, has been achieved.

The paintings of the stations of the Way of the Cross on the walls of the church are illuminated by the lamps which are placed above the paintings



and directed toward them. In this way, attention is drawn to works of art that are chronologically set to represent the life story of Jesus Christ, interwoven with pain and suffering.

Two statues located on the front door of the church are illuminated in a similar way, namely St. Antony and St. Nicholas. In addition, the following statues are on the wall behind the altar: Don Bosco, the Virgin Mary, and the Sacred Heart of Jesus, to which the church is dedicated. We illuminate them with the help of directional reflectors located below the statues, thus additionally drawing attention to them. Symbolically speaking, the statues are illuminated by the Divine light.

There is a cross on the same wall, quite large in size and very impressive. It is illuminated by a LED strip, colour temperature 2700K. It is a warm white colour, which in reality gives yellow light. Considering the fact that wood is one of the natural warm materials, the LED strip, with its colour temperature, fits perfectly

with the wooden structure of the cross. On the other hand, it visually contrasts with the cold concrete wall on which illumination is reflected. By applying this LED strip, we are able to draw attention to the difference between the two materials, but also to the ability to connect them, by selecting the appropriate characteristics of the light source.

In addition to the lamps directed towards the exhibits, there are spotlights at the top of the oblique pyramid. In the evening, they replace the natural zenith light and take over the role of functional illumination of the church.







## Biographies of the co-authors of the publication



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Architect, Associate Professor and Scientific Advisor at the Faculty of Architecture of the University of Zagreb. She has been engaged in the study of modern and contemporary Croatian architecture and industrial archeology, and has published about a hundred papers in the field. She received her master's degree in 2002 (Zvonimir Vrkljan) and her doctorate degree in 2007 (Zoja Dumengjić). She is the recipient of the 2010 National Science Award for the Lexicon of Architects of the Atlas of Croatian Architecture of the XX century (with Uchytil-Kahrović). She is the author-curator of the Croatian performance at the 14th Venice Biennale in 2014, with the theme Fitting Abstraction, 1914-2014 (selected by K. Sherman). She works on affirmation of international cooperation of the home faculty.



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She graduated in 2014 from the Faculty of Polytechnics, University of Donja Gorica (B. Sc. Engineer of Polytechnics), and then, at the same faculty, enrolled in postgraduate studies in the field of Civil Engineering and Modern Technologies, where she received her master's degree in 2017 on "Project management: Connection Between Design and Construction of Facilities in BIM Environment", under Prof. Zoran Cekić.

After completing her basic studies, she began her career as a civil engineer on one of the most significant investment projects in Montenegro, the construction of the Porto Montenegro complex, where she still works today.

Since 2017, she has been hired as a teaching assistant at the postgraduate studies of the Faculty of Polytechnics, University of Donja Gorica.



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He graduated from high school (Gymnasium) in Ljubljana (Slovenia). He studied Theology in Turin (Italy) at Pontificia Salesiana University, where he received a degree in 1995. He worked as a priest and leader of the Youth Centre in Maribor, Slovenia.

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## **Catholic Church of the Sacred Heart of Jesus Podgorica**

Experience of Sacral and Brutalist Architecture

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