Modernism in the Case of Sports Architecture in Yugoslavia

Adnan Zoranic
International University of Sarajevo, Hrasnica cesta 15, 7100 Sarajevo, Bosnia and Herzegovina
azoranic@ius.edu.ba

Abstract. Former state Yugoslavia, after World War II, declared a wish to establish its own social and state system somewhere between capitalist West and the socialist East of Europe, representing a specific area, in the geopolitical, but also cultural sense. New socialist society declared ideals which coincided with the modernists’ promotion of the importance of architecture and architects as creators of the base for social welfare and happiness. More intensive relationships and openness of socialist Yugoslavia to the West than the countries of the so-called Eastern Bloc, architects "infected" by modernist ideas during education in the West Europe and unquestioning and phenomenological support of the system have generated an authentic modern expression. Through the research of different study cases and examples of architecture from socialist Yugoslavia and studies of relevant scientists from the field of architecture and sociology as a predominant methodology for this study, we can investigate relations between architecture and socio-economic and cultural conditions. Sports buildings constructed in Yugoslavia, in the beginning, were created in accordance with the state strategy for the development of sport and accordingly promotion of massive physical activities for a wider population. The most influential moments for the development of sports infrastructure correspond to the state strategy for self-promotion to the World as an open society, by using sports success and the organization of international sports manifestations. Yugoslavia successfully applies and gains the most important international sports competitions as the World and European championships in some of the most popular sports, Mediterranean games in Split, University sports games in Zagreb and Winter Olympic Games in Sarajevo. These international manifestations were used as a chance for remarkable urban and architectural developments and structural changes of the host cities. Through the research of different study cases and examples of architecture from socialist Yugoslavia and studies of relevant scientists from the field of architecture and sociology, as a predominant methodology for this study, relations between architecture and socio-economic and cultural conditions will be investigated. Some of the examples from this study have promoted the idea of combined functional uses related to sports, cultural and commercial activities, built under a clear influence of brutalism architectural principles. Others present innovative structural and functional solutions in accordance with the most recent technology of that time which results in some of the most beautiful temples of sports architecture in this part of Europe and wider.

1. Introduction
Very early after the establishment of the socialist Yugoslavia, and in accordance with the socialist doctrine, sport has taken a significant place in society. The development of sports culture and recreation is widely propagated from the level of educational institutions, sports societies up to the top sport, which had a very successful role in creating a sense of Yugoslav community and patriotism.
Every performance of individual athletes, clubs, and especially the national teams in all group sports were followed with great care and publicity since the 1950s until the end of Yugoslavia. In parallel, the state provides generous support and strategically develops sports, which results in exceptional results for individuals, but above all sports collectives and national teams at the world level. With the exception of winning the World Cup by Yugoslavian U21 selection in 1987, although the most popular, football did not result in winning the European or world titles at the senior level, as well as there were no significant results in European club competitions until 1991 when Belgrade's Red Star won the European Championship title, literally in the last days of the former state. The collective sports such as basketball, handball, water polo, during the 1970s and 1980s, Yugoslavia dominated the club and representative level of the world and European scene. Domination was being in female and especially male competitions, at such level that the name of the country, like synonym, was associated with the aforementioned sports. At the Summer Olympics, by the number of medals won, Yugoslav athletes achieve results at the levels of very successful national teams. An impressive sports infrastructure is being built for the development of both mass and top sport, all in line with a well-defined sports development strategy aimed at organizing top sporting events, such as a series of world and European championships, the Universiade, the Mediterranean and the Olympic Games.\(^1\) The most significant examples of sports architecture were realized in accordance with the then current tendentious of the modernist movement in world architecture.

2. Organization of top sports events as a tool for urban and architectural modernization in Yugoslavia

The highlight of the international recognition in sports, and even more in geopolitical terms, was the organization of the Winter Olympic Games in Sarajevo and Yugoslavia. Federal, republic and local resources were involved through wide support, but also through concrete engagement, in organizing one of the most significant international sports events in general. The particular importance of Sarajevo event was that only four years before in the midst of the Cold War divisions, the Olympic Games were held in Moscow without the participation of athletes from the United States and a large number of other countries from all continents, but athletes from all over the world take participation in non-aligned Yugoslavia and Sarajevo. This event, apart from its global and national importance, also played a crucial role in the development of Sarajevo, its environment and the whole of Bosnia and Herzegovina. The Organization for Economic Co-operation and Development (OECD), based in Paris, in a specially prepared study from 1968, recognized the Sarajevo region as one of the most attractive areas for continental and winter tourism development in Europe [1]. The study was served as a basis for later serious and strategic planning and development decisions and activities of the then, very agile and progressively oriented state structures of Bosnia and Herzegovina. Their visionary approach resulted in 1978 through the application and assignment of the organization of the Winter Olympics. The construction of the facilities for the Olympic Games in Sarajevo was the first Yugoslav investment venture focused on winter sports, which was used to gain experience in protecting the natural environment, but also in the overall development of tourism. [2] All planning, design and construction activities have been undertaken and successfully implemented within an extremely short period of less than 6 years.

\footnote{European championship in football 1976, World championship in basketball in 1970, European championship in basketball in 1975 and 1989, Mediterranean Games in Split and Winter Olimpic games in Sarajevo in 1984, Universiade in 1987 in Zagreb are some of the most important sports events hosted in Yugoslavia after World War II.}

"The unusually short deadline for such a serious planning task has been optimally utilized thanks
to the considerable amount of data available about mountain ranges (cartographic, geological, hydrogeological and meteorological data)."\(^3\) [3]

The organization of the students' Olympic Games - the Universiade in Zagreb 1987 and as well the Mediterranean Games in Split 1979 were used in a similar way for state promotion, but for urban redefinition and new development. In addition to a series of sports facilities being built for the aforementioned events, which significance was much greater than today, strong infrastructure support was being developed which substantially altered and improved the physiognomy and urban structure of the host cities.

"The games have reborn Split; in addition to the stadium and swimming pool in Poljud, the Gripe Sports Center was built, the Jadran swimming pools and a hotel on Zvončac, a subway tunnel was made, a tunnel which connects Spinut and Meje through Marjan was opened, a bungalow resort near the Medena hotel in Trogir was realized. Hotels "Marjan", "Bellevue" and "Lav" were expanded, a new hotel "Alkar" in Sinj, an RTV center, a new passenger terminal at the airport and a passenger terminal in the City port were built ... "\(^4\) [4]

Numerous projects for sports and other public facilities were implemented in Zagreb during the 1980s, as well as significant urban interventions on the occasion of the Universiade organization in 1987. The Jarun Sports Center was created with the Jarun lake that was used for rowing competitions, and it remains as a city lake with beach. The Mladost Water Sports Center was built, the existing Šalata sports complex was reconstructed and a completely new sports center for indoor sports was constructed with the Cibona skyscraper. The brand new bus station was built while the railway station was reconstructed. In the center of the city, many buildings and streets have been renovated, especially the main city Square of Republic and Tkalcic Street, which remained as valuable pedestrian and tourist zones of the city. Two students’ dormitories have been thoroughly renovated and there are used to accommodate over 7,000 athletes from 128 countries.

Examples of Zagreb, Sarajevo and earlier Split, through their perfect organization of complex top sports events on the highest world level and through their intelligent use for solving strategic planner issues was evident on which level of competence then social and state system was organized and functional.

3. Examples of sports architecture in Yugoslavia

3.1. Poljud Stadium in Split

One of the few buildings in the world of architecture for which it is impossible to find negative comments and criticisms is certainly the Split Poljud Stadium, built in just three years on the occasion of the Mediterranean Games organized in 1979 in this Adriatic city. By his own testimony, architect Boris Magas sought inspiration from Greek theatre. In the case of the Split stadium, he placed two such theatres, facing each other, and setting the green area between them. Thanks to this design approach, the stadium has high quality acoustics at the level of the best football and sports fields. Thus created the shape of the magnificent stadium's base is compared by the architect to a saucer that is...
covered by the translucent organic shape of seashell from the nearby Adriatic. [5] Situated in the Bay of Kastela between the slopes of Mosor and Marjan, buried into the surrounding terrain, stadium shape seeks to connect with the natural environment, despite its impressive dimensions. The contextual connection is not only formative, but the object must also be positioned to prevent the impact of strong wind. The stadium is set to be open to the Bora wind and for covering was used as a completely new material, polycarbonate “lexane” with 70% of UV absorption as a protection against the bright Mediterranean sun. All accompanying service and business facilities are located in the buried part of the building and under the grandstands, which further emphasizes the concept of an elegant floating open shell construction. The roof structure is solved by a system with no columns, and it was made by steel spherical structure - "Mero", mounted over, up to then a world record span of 206 m, a transversal length of the structure is 44m and its height above the ground, reaching 37 m [6]. The original stadium capacity of 50,000 has been reduced to 35,000 accordingly to new regulations and is quite satisfactory for the needs of a city as Split. Regard to Štulhofer, Magaš has created a lightweight, floating structure that is rarely well received from experts and from the general public, visitors and domestic football club supporters. [7]

The construction of the stadium Poljud and many other sports facilities, numerous interventions in the maritime, aviation, road and rail transport infrastructure, construction and renovation of tourist facilities in the city and its region are still functional today. The strategic renaissance of Split due to the organization of the Mediterranean Games was used in the right way with results that outlived the then-current politics and the state that organized and implemented it. [8]

3.2. Cultural and sports centers
Construction of cultural and sports centers during the 1960s and 1970s, as a necessary infrastructure, marked the development of sports and mass culture in Yugoslavia. The concept of many such centers was similar and consisted of the main part with multifunctional halls with accompanying trade and craft facilities, which aimed to form a kind of secondary shopping centers that would stimulate the development of the so-called “small business”. It was the name for the business activity of small private companies, mostly commercial, service and crafts with limited size and scope of activity controlled by the socialist state system. With the change of the social system, such centers remain in the shadows of new, capitalist, glittering shopping malls, temples of mass consumption and consumerism, and collapse financially and constructional, gaping half-empty in the central zones of post-socialist Yugoslav cities. Their buildings of interesting, often brutalist architecture with daring constructive solutions still evoke memories of the glorious days of Yugoslav indoor sport, which often dominated the European and world scene at club and representative levels. These centers hosted top level competitions at European and World Championship levels. The halls were used for concerts by popular and cult Yugoslav and world music sensations. Instead of the former Cultural sports centers in downtowns, today we have newly built halls popularly called arenas that are located on the outskirts of urban areas. Arenas are made to offer better traffic, organizational and safety conditions, in accordance with the requirements of modern sports, music concerts and other types of contemporary performing.

An architect who was responsible for the construction of some of the most significant buildings that fit the previous descriptions is Sarajevo-based academic Zivorad Jankovic, who co-authored with Halid Muhasilovic in the project for CSC Skenderija in Sarajevo and CSC Boro and Ramiz in Pristina, and the Gripe Universal Hall with the Koteks Business Center in Split (co-author Slaven Rozic), as well as the Vojvodina Sports Center in Novi Sad (co-authored with B. Bulic). Each of the mentioned centers was interventions in the space with enormous architectural, spatial and urban impact in the cities where they were built.

3.2.1. CSC Skenderija in Sarajevo. The cultural and sports center Skenderija is located at the end / beginning of one of Sarajevo's most significant transfers, along the bank of the river Miljacka, and at
the foot of the Trebevic hills. The complex of several accompanying sports halls, one smaller sports hall, the concert hall of the Youth Center and the main city hall in Sarajevo remains from great importance for the city until these days, although the complex has never been fully completed, as the planned swimming pool and high-rise hotel building have not been realized (Figure 1). The unfinished complex of monumental objects with emphatic geometry is arranged on three sides around the square open to the north, to the river and the bridge which all alone create one of Sarajevo's most distinct city perspectives. The entire downtown complex is materialized in natural concrete, with clearly legible construction, simplified shapes and refined aesthetics in the spirit of Kahn's philosophy in architecture and the brutalist understanding of modernity that existed primarily in the United States in the 1960s, when designer Jankovic stayed there because of his specialization in Michigan. The underground part of the complex was used for business and shopping centers, which according to co-designer Halid Muhasilovic, followed the functional-spatial urban matrix of the old Sarajevo bazaar. In such oriental urban organizations, shops and crafts surround objects of greater importance: libraries, madrasas, sacral objects, hamams, bezistans and contributing to their functioning, as it should be in relation to the premises of the business center and halls in Skenderija. [9] The CSC Skenderija project was awarded with the most significant Yugoslav award for architecture in 1969 by prominent newspaper “Borba”.

The results of this investment in sports and the creation of excellent conditions were also evident in the fact that after the construction of the hall, parallel with other activities in the organization, the basketball club "Bosnia", which played its games on this court, won the European Championship title in 1979, and in the following years played a significant role in domestic and European sports fields. Skenderija was also extensively used during the upcoming Olympics and for many other sports, cultural and fair events until the time of Bosnian war and the period after, when Skenderija became the subject of transitional machinations, largely decayed and has shared the destiny of other similar structures built in some very different times.

Figure 1. CSC Skenderija, Sarajevo, 1969, arch: Ž. Jankovic i H. Muhasilovic
3.2.2. Gripe hall and Koteks center in Split. Gripe sports hall and the Koteks shopping center in Split are other interesting examples of multifunctional sports centers established in socialist Yugoslavia in the late 1960s and 1970s. The complex consists of a series of terraces, squares and passages, one polyvalent sports hall with 6000 and smaller with 3500 seats, several additional halls and, in separate building organized numerous commercial contents of different sizes and uses. Situated near the historic center of the city with a large number of visitors, the center was one of the city's facilities that essentially contributed to the quality of life in Split. Sarajevo academician Zivorad Jankovic designed the sports part of the complex and Split architect Slaven Rozic designed Koteks business center, which was completed a bit later in 1981. Although in Yugoslavia by that time, the system of the so-called department stores was very developed, this center was declared as the first true shopping mall in a country which social orientation, in theory, was often anti-consumerist, but in the reality was established a high level of consumer culture, so characteristic for Western capitalist societies.

The construction of the complex was part of strategic planning related to the organization of the Mediterranean Games in 1979. The organization of very significant sports event for that time resulted in many important infrastructural and development strategic changes for Split but also brought the construction of several crucial sports facilities, such as the aforementioned Poljud Stadium, swimming center and the Gripe hall. The Gripe sports hall had a similar influence on the development of the domestic basketball club as in Sarajevo case. Jugoplastika from Split won three titles of European championship soon after the construction of the building.

The entire complex is dominated by a monumental hall with lateral raised wings and a flat central part. Two monumental central beams extending beyond the gabarit of the hall and define the roof surfaces and the strong form of the sports center. The main form of the hall is harmoniously joined with clear cubic and cylindrical geometric forms of smaller buildings, as well as the cascading form of shopping mall and its horizontally stretched stripes of terraces that culminate in a pyramid-shaped top floor. All exterior spaces of the complex are connected by cascade terraces and through the business center. This concept creates a characteristic urban atmosphere of Split's urban matrix, underlined by the dominant whiteness of the buildings and other typical Mediterranean utilitarian and visual elements, such as pedestrian squares, stairs, pergolas... The concept is a powerful urban intervention in the city area that invites citizens to socializing and staying outdoors in the spaces of leisure, culture, sport and shopping that made a rarely democratic set. [10]

3.2.3. CSC Boro and Ramiz in Pristina. The example of the Boro and Ramiz Cultural Center from 1977 in Pristina, similar to the building of National and University Library in this city, is certainly not a typical example of purist modernism, but accordingly time of its creation and the original architectural approach to the design of sports facilities, it is worth mentioning and should be the subject of researches related to the architecture of socialist Yugoslavia. Its formative, visual expression and strong emotion have marked the city and, along with the aforementioned library building, have become the most recognizable architectural features of Pristina.

The asymmetrical construction of the main building, like the Gothic cathedral, raises high above the surrounding silhouettes of the city and suggests the existence of a smaller and larger sports hall with a capacity of 3000 and 8000 spectators with all the accompanying facilities. A very ambitious project for the construction of a sports and recreational complex was partially realized, without the initially designed hotel and swimming pool buildings. However, the dominant facility of the halls, the building of the Youth Center and the nearby football stadium were realized, while a shopping and business center was formed below the approach plateau, as in the case of the Skenderija in Sarajevo.

3.3. Zetra - sports hall in Sarajevo
Successful candidacy and obtaining the organization of the Winter Olympic Games in Sarajevo in 1984 arose the need to build a complete infrastructure and network of sports facilities in the city and in
the mountains where the Olympic competitions were held. In addition to facilities specific for winter sports, such as the bob and sled track on Trebević mountain, two ski jumping skis and tracks for Nordic skiing on Igman mountain, top-class ski trails on Jahorina and Bjelasnica mountains, the city is home of the Zetra - sports and recreation center. This urban-architectural complex is located as a continuation and an integral part of the so-called green transversal, which aimed to allow clean air to flow through Sarajevo from the north and the river Bosnia valley, through existing and future green parks and recreational areas, to the south and through the forests of Trebević Mountain. As part of the complex, there is a track for skating with stands and a sports hall with 9,000 seats, which can accommodate up to 20,000 visitors for concerts or similar events. The facilities were built as a part of a wider area with Koševo Olympic Stadium, a series of auxiliary sports fields and facilities for the faculties of sports and physical education.

The basic construction of the hall consists of six steel space trusses formed as six frames, which follow the primary form of the building and bridging the imposing space of the hall. Architects Dušan Djapa and Lidumil Alikalic were awarded by the “Borba” Award for the Zetra project. With their simple constructive solution, they defined a representative architectural concept with the interior of which is dominated by calming tonalities of colors, carefully selected materialization, visible construction and all accompanying installations. Lateral space trusses remain visible from the outside on the south and north facades. The simple design and elegance of the structure are accentuated by the copper cladding of the imposing roof and front facades with discreet application of concrete, glass and boards of brown minced stone.

Harmonious architectural composition and logical urban thinking result in the establishment of a suitable relationship with the surrounding context and general urban needs. Milenkovic believes that Zetra's pedigree was established on strong attachment to the ground and the urban milieu as an important parameter for conceiving and designing such complex centers. [11] In such an identifying and emotional meaning of Zetra for the citizens of Sarajevo, we can search for the reasons for the targeted destruction of the hall at the very beginning of the war in 1992 (Figure 2-3). The idea of the pre-planned and consistently executed strategy of destruction sought to break the spirit of the city, which only eight years before that war was at the peak of social, cultural, economic and civilizational development. Zetra was set on fire almost simultaneously with a series of objects that represented some of the most recognizable examples of Sarajevo's rich identity in architecture and culture in general. The sad fate of the hall was shared with surrounding sports grounds, many of which, because of the inability to use the city cemeteries due to the proximity of intense war activities, turned into cemeteries in the war killed citizens of Sarajevo. Sharing the destiny of the city, Zetra hall and all surrounding areas have transformed from the place for play, joy and development of Sarajevo youth into real and symbolic places of their suffering.

The hall, although completely burned and destroyed, was rebuilt in 1999 according to the original ideas and designs, with the help of the International Olympic Committee, the city of Barcelona, the European Union, and thanks to the engagement of former President of the International Olympic Committee, Juan Antonio Samaranch, whose name the hall bears today.
4. Conclusions
Modernist architecture in socialist Yugoslavia had a very important role and it was used as a visual reflection of proclaimed ideas about an open and modern socialist society. In the avant-garde modernism was recognized as a new spirit complementary to intentions for the development of an avant-garde society, so different from western capitalism and even more different than Soviet socialism. Instead of socialist realism, Yugoslav artists and architects have chosen modern art, much closer to tendencies in Western Europe. This decision had very strong and astonishing support from the state structures in accordance with the promotion of Yugoslavia as a new social concept. The sport was used as one of the tools for the mentioned promotions in the world and on the domestic level. Organization of some of the most important global sports events was the perfect promotional instrument, but the opportunity for urban and architectural modernization and infrastructural improvements in the host cities and their regions. Sports and cultural objects were just some of the very visible architectural manifestations of strategic modernization and progressive changes of the whole society. Through their architectural design and content refinement through the events that took place in them, they became symbols of Yugoslav true belonging and active participation in contemporary world trends in the fields of culture and sports, but architecture in particular.
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