

Mariusz Twardowski

patwardo@cyf-kr.edu.pl

Institute of Urban Design, Faculty of Architecture, Cracow University of Technology

FOOTBALL STADIUMS – ICONS OF SPORTS ARCHITECTURE

STADIONY PIŁKARSKIE – ARCHITEKTONICZNE IKONY SPORTU

Abstract

Modern stadiums constitute a challenge to urban planning, architects and buildings. The exceptional character of these enormous structures is, on the one hand, highlighted by their unique massings and the innovative materials that they employ, while on the other, their composition within the space of the city and its skilful blending into its context causes them to become icons and landmarks. Three different examples demonstrate that the requirements presented above can be fulfilled. Modern forms have been fitted into the scale of cities of various size and adapted to their surroundings. Functional solutions were well-thought out and circulation and access have been placed so that events would not block traffic in the city each time they are held.

Keywords: stadium, Eisenman, Arroyo, Herzog & de Meuron, Munich, La Coruña, Barakaldo, icon

Streszczenie

Nowoczesne stadiony to wyzwanie dla urbanistyki miasta, architektów i budowniczych. Wyjątkowość tych dużych budowli z jednej strony podkreślana jest niespotykaną bryłą i zastosowanymi nowatorskimi materiałami. Z drugiej strony, ich kompozycja w przestrzeni miasta i umiejętne wpisanie w jego kontekst sprawiają, że stają się one ikonami i punktami orientacyjnymi. Trzy zróżnicowane przykłady ukazują, że powyższe wymagania mogą być spełnione. Nowoczesne formy wkomponowane zostały w skalę różnej wielkości miast i w dostosowane do otoczenia. Rozwiązania funkcjonalne przemyślano a komunikację i dostęp usytuowano w sposób taki, by każdorazowe wydarzenia nie blokowały ruchu w mieście.

Słowa kluczowe: stadion, Eisenman, Arroyo, Herzog & de Meuron, Monachium, La Coruña, Barakaldo, ikona

1. Introduction

Football is the national sport of many of the world's countries, as well as of the majority of European states. The quality of an arena for such a sport is decided by not only its form, but also the variety of function, technological and material solutions, as well as those that support sustainable development.

Stadiums most often become landmarks on the scale of the city, while sometimes they become dominants within the surroundings in which they have been built. The owners of sports clubs who build these structures want them to become the icons of cities. When writing about form and composition we can analyse ideas concerning site development and the unique shape of architecture. When discussing function, we should remember not only about accompanying functions, which are going to operate practically only during matches organised at the stadium, but also about circulation, access and the space for spectators itself. Flexible solutions make it possible to organise other events than football matches. Technology and material solutions complement the form and composition and cause a given structure to become unique. Solutions that are friendly to the environment reduce energy consumption and generate lower maintenance costs. They are also friendlier to the environment. It would be appropriate to analyse in what manner do the referenced solutions placed in cities of various size operate and what requirements should we set for the designs of these complicated buildings in order to meet the criteria below: a large city – a large stadium – city limits, average-sized city—medium-sized stadium – city centre, small city – a small stadium.

Exceptional architectural solutions

In order to find quality in the architecture of sports stadiums, the author described three examples of arenas: in Munich, Barakaldo near Bilbao and in La Coruña. Two of them have been built, while the third remains in its design phase. The examples that were selected show the problem being discussed in a scale appropriate to the localities in which they had been placed. Their cubature and spectator capacity has been appropriately thought through and selected in relation to the size of the city, the significance of the matches [2]¹ and the popularity of clubs whose teams play on these arenas. The large stadium in Munich found its place on the border of the city. The site on which it was built had sufficient potential for the construction of a large stadium, parking lot, train station and a connection with nearby highways. The small Barakaldo stadium was placed within the context of a small city. The arena in La Coruña is a large structure in the centre of an old town district. It is meant to replace the currently used stadium.

¹ Bayern Munich, apart from playing in the Bundesliga, plays in the Champions' League. This league's matches gather an exceptionally large audience. Deportivo is one of the best teams of the Spanish La Liga and regularly plays in the European League.

2. Allianz-Arena, Munich, Germany, design by Jacques Herzog and Pierre de Meuron

For many years, two of Munich's clubs have been using the same stadium. The Olympic Stadium (69256 seats), designed by world-famous architects Günter Benisch and Otto Frei, with the first match to be played on it taking place on the 26th of May 1972 between the national teams of Germany and the Soviet Union, was used up to 2005. Since the 2005/2006 season, the local Bayern and TSV 1860 teams have been competing on the new Allianz-Arena stadium. The future of the Olympic Stadium is a bit of a mystery, however, as concerts and other large events take place there and it has been opened to visitors on weekdays. The previous Grünwalder stadium (12 500 seats), on which matches were played prior to 1972, served the amateur and junior teams of both clubs up to 2017. In 2017 the contract between the management of Allianz-Arena and the TSV 1860 sports club was terminated. The club was demoted to the regional league and returned to the older Grünwalder stadium [2].

The idea for the construction of Allianz-Arena crystallised on the occasion of Germany entering the competition to become the host country of the World Cup Tournament in 2006. In 2001 a referendum was organised, asking the residents' opinion on the matter of the construction of the new stadium [2]. In 2002 an international architectural competition was announced for the design of a stadium meeting the requirements of the football federation of Germany, UEFA and FIFA, as well as functional requirements concerning the safety of spectators, fire safety and the use of the structure, in addition to not limiting it to serving solely as a football stadium once every two weeks. The competition jury, composed of acclaimed architects from all over the world, representatives of football federations, the owners of the structure and the sponsor, selected a design by the Swiss design company Herzog & de Meuron². It was decided that their work fulfilled the conditions described above and that it would also become a hallmark of the city, an interesting stadium of the upcoming World Cup and an excellent advertisement for the sponsor – the Allianz company. Its representatives stated that the see-through cladding that towers above a plateau would be identified with the company in the best possible manner.

Despite the fact that the form and the materials can appear futuristic, the architects, through the adoption of “transparency”, referred to tradition by reminding us of the suspended tent-like structures of the Olympic Stadium of 1972. The building is a play of light, which is to elicit “otherworldly” emotions. The lighting fitted to structural elements, by illuminating the semi-translucent shell, creates an illumination of colours, which “introduces the building into the magical meaning of poetry” [29]. It was also stated that, due to the fact that the Allianz-Arena was meant to be the host stadium for both of Munich's clubs, they could identify with the stadium through its highlighting with light and colour. Thus, when one team plays, the stadium is lit red, when the other plays – it is blue.

² Jacques Herzog and Pierre de Meuron are well-known and acclaimed architects whose built projects can be found in Switzerland, Germany, France, Italy, Austria, Great Britain, Spain, Japan and the United States. They are the laureates of architectural competitions from all around the world. They are invited to deliver lectures at the best architectural universities. In 2001 they were awarded the greatest distinction in architecture – the Pritzker Prize. From: [61].

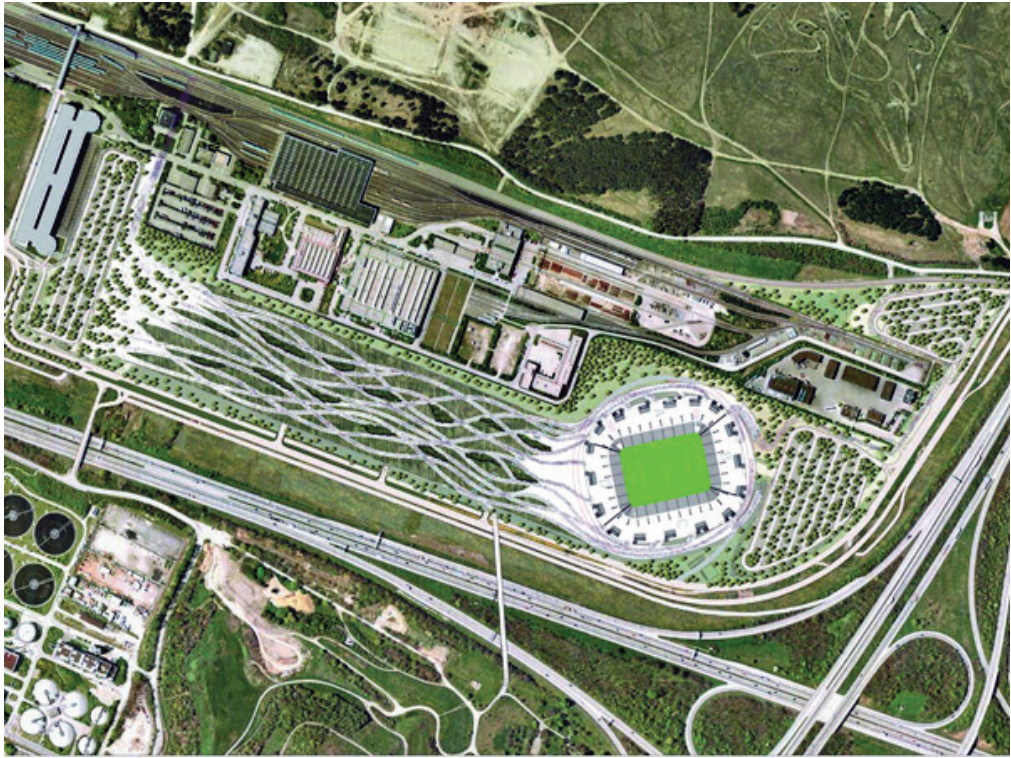


Fig. 1. Allianz Arena in Munich, top-down view (source: [58])



Fig. 2. Allianz Arena in Munich, construction on the stadium (source: [2])



Fig. 3. Allianz Arena in Munich, proposals of the illumination of the stadium depending on which football club is currently playing (source: [28])

Jacques Herzog and Pierre de Meuron had uniquely solved the functional matters of the stadium, which was another point that convinced the jurors and the sponsor. The illumination of the pitch was suspended from the roof covering the spectator stands of all teams. The stadium can house 66,000 spectators on three levels of stands, including seats for journalists and guests of honour. Persons with disabilities can use 200 places for themselves and their caregivers on the lower stand. A parking lot for 11,000 cars (including 350 spaces for buses and 1,200 spaces underneath the stadium) was placed on both sides of the complex, in addition to stores with club merchandise, as many as 400 kiosks and two restaurants for the fans of Munich's teams, located on opposite sides of the stadium and isolated from one another. Allianz-Arena (in accordance with competition guidelines) has not resisted commercialisation. In order for the project to be profitable, a shopping gallery was placed underneath the passages (entry from one of the parking lots).

Thanks to its appropriate placement on the site, the parking lot has been quite easily integrated with the city's bypasses. The project was completed in 2005.

The project presents itself impressively: 66,000 spectators, 171,000 m² of floor surface area, a shopping gallery and parking spaces for 11,000 cars. However, that which is essential in such an enormous project is that the architects elegantly and delicately ("semi-translucently") blended the building into the surrounding infrastructure and the flat landscape surrounded only by forests, meadows, the nearby highway intersections and the buildings of the city visible in the distance.

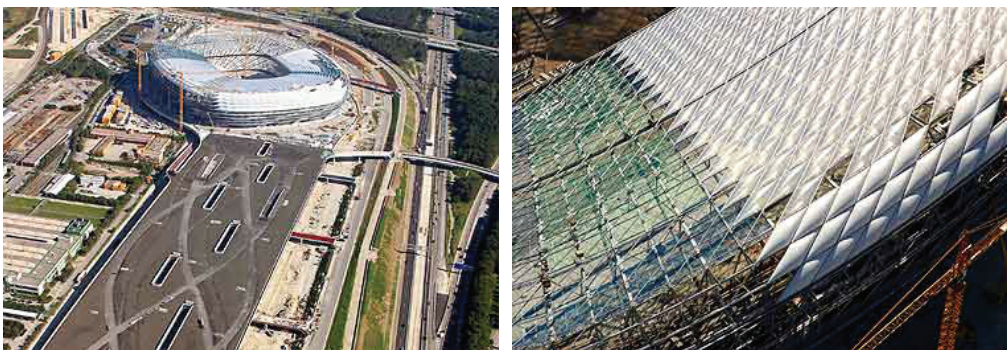


Fig. 4. Allianz-Arena in Munich, photographs of the construction site (source: [71])



Fig. 5. Allianz-Arena in Munich (photo by Mariusz Twardowski)

3. Lasesarre Barakaldo, Barakaldo, Spain, design by No.MAD Arquitectos, Eduardo Arroyo

The stadium of the local team is considered to be one of the best – as well as best-looking – examples of sports arena architecture. The Spanish architect Eduardo Arroyo³ proposed the use of geometric forms made from semi-transparent materials in order to preserve the contact of the modern massing with nature.

One would be very hard pressed to find any excessive decorations and details in the design. The only decoration are the large, almost one-and-a-half-metre tall white letters – the name of the complex and the city, located on semi-transparent panels on the outer wall of the stadium.

Transparency and a connection with nature and the surroundings were also highlighted through grates separating the interior of the stadium from the street. They were built in a modular manner, as if forming a pattern – a print on the material and thanks to their slightly sculptural shapes, refer to nature. This measure also caused the gates composed from elements designed in this manner to cease to be negatively associated with entrances to the stadium, their only purpose being protection from aggressive football fans.

³ Eduardo Arroyo belongs to a young generation of Spanish architects. Born in Bilbao, he graduated from the Faculty of Architecture in Madrid in 1988, where is currently a professor. He also teaches at the best architecture schools around the world. He has received many awards and honorary mentions in competitions, he took part in the EXPO 2000 international exhibition in Hanover as a representative of Spain, as well as in the most prestigious architectural exhibition in the world – the Biennale in Venice, also in 2000. One of his last designs is the football stadium in Saragossa (2002). From: [41, p. 42].

The illumination of the pitch was fitted to geometric columns (covered, similarly to the entire stadium, with semi-transparent panels from Plexiglas). It should be added that this solution in terms of lighting columns was its architect's homage to the history of the stadium. Lighting columns are no longer used on stadiums, as they are considered obsolete solutions. Eduardo Arroyo replaced the old lighting columns with "new" ones.

Once again highlighting the connection with nature, the architect designed the pitch of the stadium in such a way so that it blends in with the spectator stands. In some places it "slides in" between the stands, curving slightly upwards.

The seats for spectator stands are another reference to nature. As the author asked – how difficult it is to paint anything like a rainbow in today's world [44]. It was placed in such a manner so that the spectators sitting in the closest rows to the pitch "play" together with their team. In addition, the designer planned the planting of 1,000 trees near the stadium, composed using a modular grid.

The stadium presents completely different aesthetic qualities in the evening. The semi-translucent surfaces start to shine in their own, highly sensitive and delicate manner. As a result, the architect obtained an extraordinary impression of the stadium's lightness, which has been "elevated" above the surrounding urban context in this manner.



Fig. 7. Lasesarre Barakaldo Stadium, Barakaldo, the stadium against the background of the city's buildings, (source: [8])

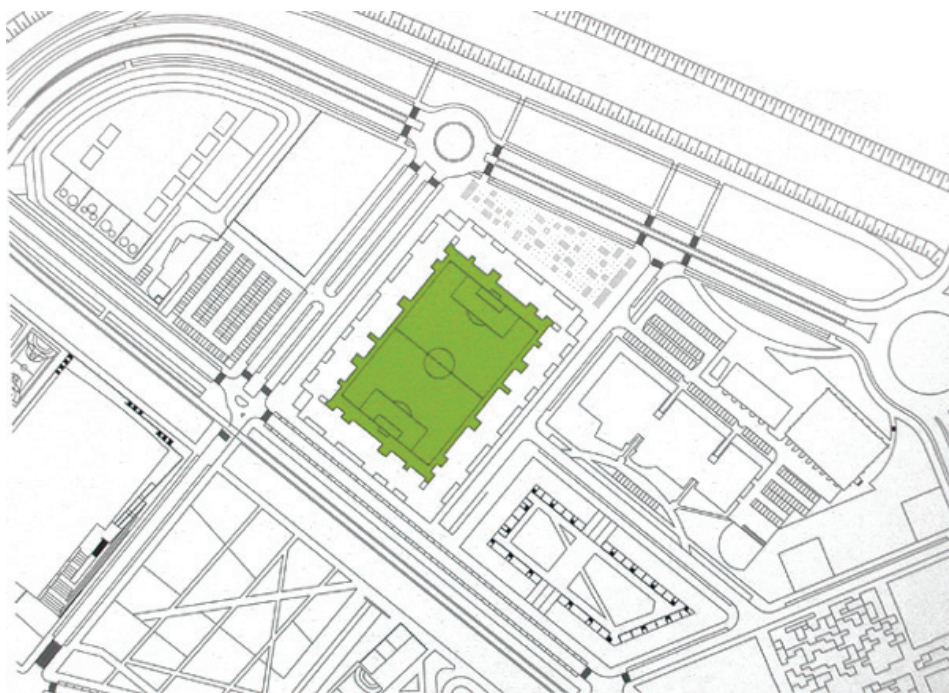


Fig. 6. Lasesarre Barakaldo Stadium, Barakaldo, site development plan (source: [41, p. 44])



Fig. 8. Lasesarre Barakaldo Stadium, Barakaldo, facade with semi-transparent, backlit panels and steel grates, phot. by Roland Halbe (source: [43])



Fig. 9. Lasesarre Barakaldo Stadium, Barakaldo, illumination of the stadium during a match, phot. by Roland Halbe (source: [48])



Fig. 10. Lasesarre Barakaldo Stadium, Barakaldo, the cameral space of the interior of the stadium, phot. by Roland Halbe (source: [43])



Fig. 11. Lasarre Barakaldo Stadium, Barakaldo, Interior illuminated by the sun entering through the sculptural grates, which result in an extraordinary interplay of light and shadow, phot. by Roland Halbe (source: [17])

The designer, using very simple means, organised the circulation and access to each of the stadium's sectors, able to house a total of 10 thousand spectators. The layout of the entrance gates around the structures directs the spectators directly to small sectors without causing a commotion during entering and leaving the arena. Every sector is a sort of repeated "building" with its own organisation of the spectator stands, its own toilets, gastronomic establishments and stores with football club merchandise. Every element of this building "proves" that it is a fragment of an immeasurably well-thought out composition.

The stadium, built in 2003 in Barakaldo, which has a population of 96 thousand and is located 8 km away from Bilbao, has become a hallmark of the city and is one of the permanent features of guided tours visiting the city.

4. Estadio de Riazor, Deportivo La Coruña, Spain, design by Peter Eisenman

Real Club Deportivo La Coruña is not perhaps as famous as Real Madrid or F.C. Barcelona, but it has its own illustrious traditions as well. Since the 1990's it has always been in the leading portion of the Spanish La Liga, celebrating its national cup title in 2000.

"Art does not try to be sublime, beautiful or grand. It is rather a commentary on the current events of the present... The spectator observes the grey and ordinary, oftentimes ugly architecture. However, sometimes it so happens that he sees quite remarkable things. In order

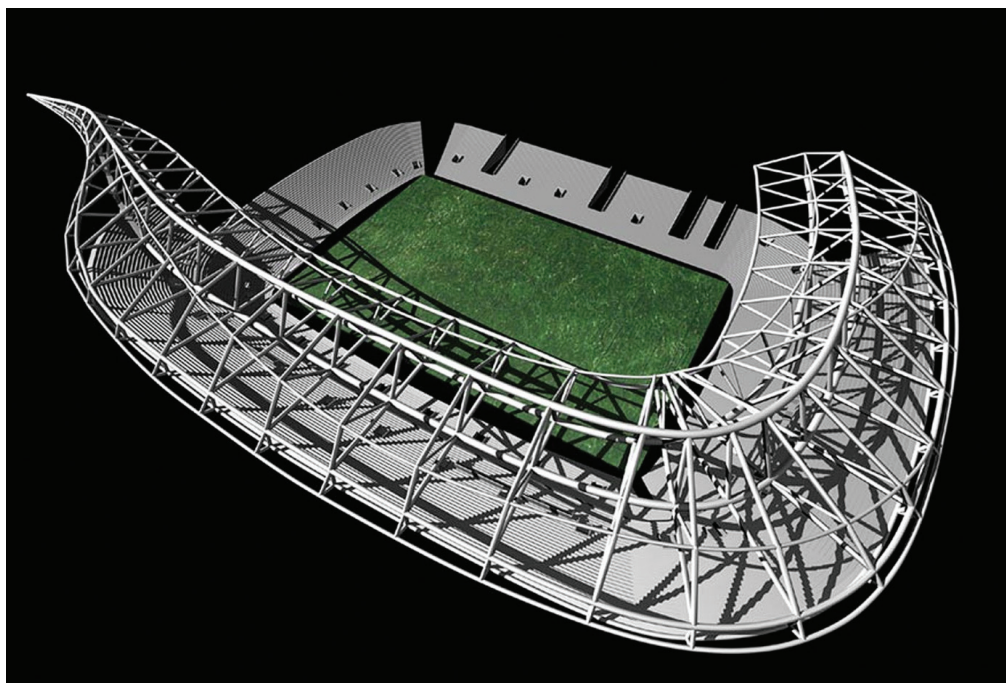


Fig. 12. Stadion de Riazor, La Coruña, visualisation by Peter Eisenman Studio, source: materials made available to the author by Peter Eisenman

to be called original, they break away from those already devised with their form. At the same time, they build beauty” [69]. Peter Eisenman’s design is exactly such an image of subtle architectural compositions.

The American architect Peter Eisenman⁴ was selected to develop the design of the new stadium, which was to meet the extremely strict requirements of the club’s board and shareholders. The author of the design performed admirably in the task he had been given. The design of the new Estadio de Riazor presents two directions of thought: obtaining a model of a professional club with a modern stadium and of the future and development of the city. A private developer, in cooperation with the city and the region, as the hosts of

⁴ Peter Eisenman, born in 1932 in Newark, New Jersey, USA, is an architect and academic teacher. He studied at Cornell and Columbia University, defending his doctoral dissertation in Cambridge, Great Britain. He received three honorary doctorates. He currently teaches at the faculties of architecture of Cambridge, Princeton, Yale, Ohio State and Harvard universities, as well as at ETH in Zurich and IUAV in Venice. He wrote around a dozen books and publications. For such a popular architect, only a small number of his projects have been built. His latest built projects include the Holocaust museum in Berlin, the Arizona Cardinals NFL stadium in Phoenix, the City of Culture in Santiago, Spain. Most of his built projects are the results of winning architectural competitions. He is regularly selected as the representative of the United States to participate in exhibitions held during the Biennale in Venice. He is one of the world’s most famous architects, a representative of the New York-based group of architects “New York Five”: Peter Eisenman, John Heyduk (died in 2000), Michael Graves (died in 2015), Charles Gwathmey (died in 2009) and Richard Meier, which paved the way for a new perspective of architectural theory and of architecture as an art. From: [70, p. 100].



Fig. 13. Estadio de Riazor, La Coruña, mock-up by Peter Eisenman Studio, source: materials made available to the author by Peter Eisenman

the football club, decided that the existing stadium no longer fitted the image of the club. It was neither about the number of seats⁵ nor its size, but rather about the internal functional layout, the flexibility of solutions and the possibility of proposing various additional functions (e.g. residential, commercial or hotel spaces).

In the design, Eisenman presented a sophisticated architectural critique of the surrounding compositional ever-day reality. Eisenman won over the board of the club not only with the immensity of the structure's multi-functionality, but also with the three-dimensionality of its architecture, a philosophical depth very rarely encountered in architectural designs and the fact that

⁵ The existing stadium houses 34,600 seats, while the new one is meant for 36 000 spectators. Information from Peter Eisenman.

only a mature patron of the arts could appreciate the work, understand it and afford such a design. Eisenman claimed that in order to treat him seriously, to take him literally and believe him, it was necessary to become lost. He said faith made it possible to move forward, with temporarily “losing oneself” enabling an outlook on and evaluation of a work without negative contexts or habits [51, p. 25]. Eisenman, as a leading representative of deconstructivism in architecture, attempted to depict a conflict of two formal principles in the design: of instability against stability and the changing of time against the unchanging space. He depicted these conflicts by elevating the building above the ground and designing the structure of the stadium in the form of three-dimensional, spatial trusses and its storeys as surfaces suspended from different heights. The building becomes as fleeting as unrecorded time. The stable structure unstably permeates into the area of the city and through its winding form reaches the bay. Apart from philosophical discussions concerning the proposed building, in effect the architectural form must refer to logic. If it really is so then we can compare Eisenman’s work with the previously described designs.

Peter Eisenman added over one hundred and fifty thousand square metres of multi-functional spaces to the basic sports-related function (the stadium, a swimming pool, tennis and squash courts, gyms, etc.). They feature a museum of the history of the club and exhibition spaces, restaurants, a hotel for 200 guests with conference halls, a restaurant and the necessary facilities, a community centre with exhibition halls, a commercial section with shops and

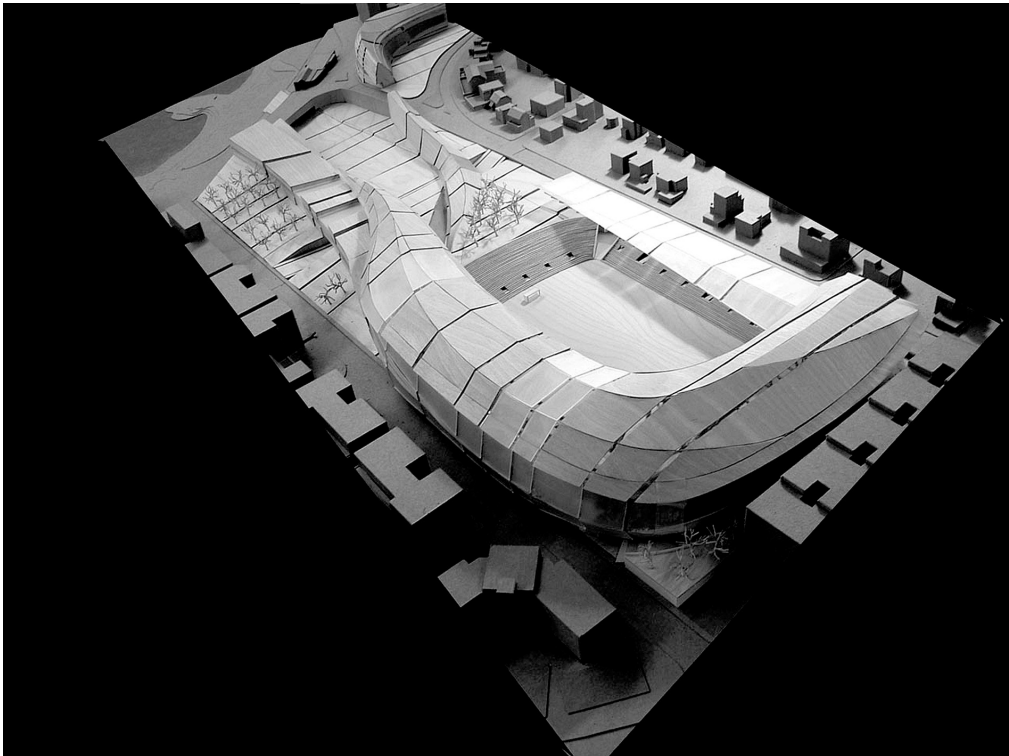


Fig. 14. Estadio de Riazor, La Coruña, mock-up by Peter Eisenman Studio
(source: materials made available to the author by Peter Eisenman)



Fig. 15. Estadio de Riazor, La Coruña, wizualizacja Peter Eisenman Studio (source: materials made available to the author by Peter Eisenman)

boutiques, a park for children – a place, where entire families could reside and where parents could leave their children under care if they need to – as well as office spaces, green spaces with gardens and a park, an enormous parking facility and apartments meant both for sale and for rent (the entirety featuring an impressive floor area of 250,000 m²)⁶. Each of the elements of the additional space has been carefully designed in order to reconstruct existing urban structures in such a way as to cast a new light on them, to calibrate them anew with the newly designed ones, as well as the existing context in order to underscore the innovative aspects of the entire layout.

In this design the author searched for a new expression for urban space by using the natural beauty of the forms of the nearby bay and its port. The architect contained the stadium, the hotel and retail spaces in an organic massing of dynamically elevating surfaces [52]. After its construction the building could, without a doubt, become an icon of the city. The subtlety of the form of the stadium, however, has not been fully appreciated by the developers and this design from 2001 has not been built. We should only hope that the cost⁷ of the construction of the entire complex will not exceed the financial capabilities of the club, whose conflicts with the municipal authorities are postponing the project.

⁶ Information from Peter Eisenman.

⁷ The cost of the stadium's construction is estimated at 85 million dollars, while that of ancillary functions – 155 million. Information from Peter Eisenman.

5. Conclusion

The examples that have been described present three cases of designs placed in completely different locations. Each of them became or could become an orientation point on the scale of the city. They introduce modernity into the tissue of the city on each of its scales. Each of the forms has a different context, however, all of them have prospered in their surrounding conditions. Regardless of whether it is an open space in Munich, with a population of one and a half million, the multi-family buildings of small Barakaldo with one hundred thousand residents or the centre of an old town district in La Coruña with a population of two hundred and fifty thousand, all of the buildings blend into their varied surroundings. At the same time their functional variety meets the requirements of football club owners and city governors, which see profit in the use of stadiums⁸. The wealth of complementary functions makes it possible to draw additional income financing sports operations. Flexible solutions concerning spectator stands and their appropriate layout around the pitch make it possible to use the pitches and spectator stands for other entertainment-related and commercial purposes. The technologies used in the designs cause the individuality of each stadium to be unique. They lower energy consumption and the cost of their occupancy.

Difficult stadium complexes of varying scale have become pretexts for the authors of all of the presented buildings to pursue beauty. They presented greater values in their designs than those that are usually attributed to such structures and the architecture of these stadiums can cause them to become icons of sports architecture.

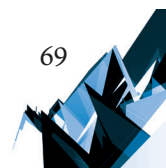
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⁸ Only in the case of Estadio de Riazor in La Coruña has the lack of agreement between the owners of the club and the city caused the construction of the stadium to be postponed for many years.

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