

# Historic Sports Facilities between Conservation and Conversion

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## Introduction

Among sports events, the Modern Olympic Games hold a special position because of their role in the evolution of sports buildings, sites and landscapes, and their uses.<sup>1</sup> Since 1960, the Games have also left a legacy of urban transformations. Overall, the Olympic Summer Games of the 20th century have left us a tangible historical legacy, in particular Olympic stadium architecture.

The stadium remains the most emblematic of the many Olympic sites: historically, it was created as a result of the event, its objectives, and values. It is a space that has become culturally significant.<sup>2</sup> One of the most relevant Olympic symbols, the medals of the Olympic Summer Games, show the stadium: 16 times in the 20th century and 21 times between 1896 and 2020. Its conservation raises a number of challenges because of its outstanding event-based nature.

The question of the long-term legacy of the Games is becoming more and more the centre of discussions as soon as an Olympic bid starts. There are official guidelines that promote the reuse and renovation of existing venues for the Games: from the Agenda 21 of the Olympic Movement<sup>3</sup> to the Agenda 2020 of the International Olympic Committee<sup>4</sup> as well as the *Charte olympique*.<sup>5</sup> However, the issue of heritage conservation with regard to the Olympic venues themselves has not been fully taken into consideration by the International Olympic Committee (IOC) or by the International Federations (IF) up to now. More precisely, renovation without an awareness of the need to protect values of an existing historic facility like an Olympic stadium has turned out to be insufficient and has led to a loss of memories, especially for cities that, after having hosted the Games, are interested in doing so again.

The next section is an overview of the Olympic stadium legacy of the 20th century, followed by the presentation of



*Fig. 1 The silhouette of the transformed Olympic stadium in Rome, the Foro Italico (photo 2016)*

some sporting and Olympic heritage particularities. After that, the paper will present a summary of the analysed values and significance of the heritage-listed Olympic stadiums. This summary is completed by the examination of some challenges posed by their conservation and design. The end of the paper will focus on how cultural heritage could benefit sports facilities.

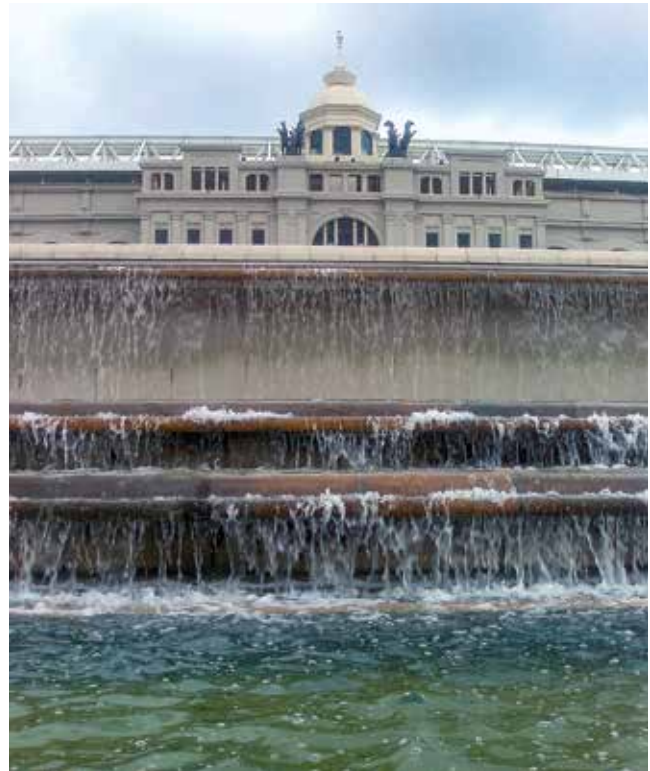
## Olympic stadiums of the 20th century

The modern history of the emblematic stadiums has been marked by the important evolution in their architecture to meet the highest technical standards (including comfort and safety) for the activities of athletes, spectators and media. Most Olympic stadiums have been conceptual and technological catalysts in the construction of outstanding sports facilities (London, Helsinki, Rome, Munich, Montreal). These stadiums have also become significant elements in urban and park composition (Berlin, Moscow), in urban regeneration (Munich, Sydney and more recently London 2012) or for strategic new urban infrastructures (Rome, Tokyo, Seoul, Barcelona). The connection between the different sites or clusters relies on adequate urban infrastructures that will turn out to be a part of the Olympic legacy. Many stadium spaces are testimonies of major historical events (Mexico City stadium). But their history is also marked by demolitions and major transformations.

The Olympic Summer Games were celebrated 23 times in the 20th century and have left us a historic legacy of 20 Olympic Stadiums (Table I). There are four more Olympic stadiums of the 21st century (from the Olympic Summer Games 2004, 2008, 2012 and 2016) and one from the 19th century – the Athens Panathenaic Stadium of the 1896 Olympic Games (a reconstruction of an ancient stadium), listed as National Heritage in 1998, one year after Athens was awarded the right to host the Games of the XXVIIIth Olympiad in 2004.

15 stadiums still exist: five of them have important renovations; in two stadiums transformations and demolition were planned in the design stage. Five stadiums have been demolished: one is three-quarters demolished (Paris 1924); three are still sports sites /stadiums (Antwerp 1920, Wembley 1948).

The demolished 1908 White Stadium in London was the first modern stadium, an example of a multisport stadium. The demolished 1920 Olympic Stadium of Antwerp had a very interesting facade with a diversity of architectural elements. Seven stadiums have been listed as cultural heritage: Stockholm (1912); Amsterdam (1928); Los Angeles (1932 and 1984); Melbourne (1956); Berlin (1936); Mexico City (1968) and Munich<sup>6</sup> (1972). The Mexico City stadium is part of a site that was declared World Cultural Heritage by UNESCO in 2007 because ICOMOS considered that the site constitutes a unique urban and architectural ensemble, testimony to universal values, which offers man a notable improvement in the quality of life. ICOMOS also considered its conservation to be at risk because of the urban development of the surroundings. Currently the Munich Olympic stadium is in the listing process for World Heritage status.



*Fig. 2 The 1929 historic façade of the Barcelona '92 Olympic Lluís Companys Stadium in Montjuïc remains unchanged after the stadium renovation in 1989 (photo 2010)*

Objects, part of the stadium ensembles, are also listed as heritage: a group of sculptures (Moscow) and the Olympic Park Cauldron (Sydney).

Some of these listed stadium buildings still retain their original character, as for example the stadium in Stockholm. Others have been transformed (Figs. 1 and 2). The Amsterdam stadium was saved from demolition by a public fundraising campaign, motivated by the idea of preserving national memory.<sup>7</sup> In some cases, the discussions regarding the stadium's architectural or historical significance have been very controversial, as in the case of the Empire Wembley Stadium.<sup>8</sup> London has hosted the Olympics three times and has built a new stadium every time. The Wembley Stadium was destroyed after it was de-listed from the National Heritage List in 2003.

## Sporting and Olympic heritage

Cultural significance is defined by the values of an object, its environment and its social activity. The study of values is an effective guide to characterising heritage.<sup>9</sup> Value typologies<sup>10</sup> have evolved through time, especially in the 20th century.<sup>11</sup> Currently they have been grouped into two main areas: sociocultural (bequest) and economic (use) values. Controversies arise when values related to uniqueness, memory, history, culture, and aesthetics (or bequest values) conflict with functional and economic (or use) values.

Sporting heritage presents particularities because a building, site, or landscape is mostly interdependent with places



Fig. 3 Logarithmic spiral of Munich '72: aesthetics in an exceptional landscape (photo 2007)

(cities, environment) and traditions (events). However, sports facilities as repositories of memories also include emotional values.<sup>12</sup> Thus, heritage experts recommend a specific analysis of sporting heritage. The requirements of sports impact the facility design constantly and complicate its conservation. These challenges increase when the conservation of the biggest and most iconic venues, like Olympic stadiums, is questioned.<sup>13</sup>

The singularity of modern Olympic stadiums can be explained by their size and the universal value of the modern Games. Historically, the Olympic Games are related to culture. De Coubertin declared that they are not simply a championship. His vision for the Games and their site seems to have been influenced by Riegl's principles on cultural heritage values: Olympic Games and their places combine abstract principles with romantic-emotional dimensions highlighting their historic roots and directing these values towards the field of instrumental ("contemporaneous") values in modern society.<sup>14</sup> However, currently there is not enough research into the cultural significance of Olympic stadiums.<sup>15</sup>

### Olympic stadiums, a modern heritage of the Olympic Games

An analysis of the descriptions in the official heritage texts showed that the seven listed Olympic stadiums differ in size, type and level of heritage (Table II). There is also a significant variation in the time span between the celebration of the Games and the listing of parts of the Olympic heritage.



Fig. 4 The Kiuri & Teller Periodisation "Typology of Stadium-City configurations" (2012, 2019)

### Listed Olympic stadiums: values and significance

The most frequently mentioned values in the official heritage documents are:

- Features like towers, main entrances or other symbolic elements, which are valued more than the architectural style (but these elements frequently disappear if stadiums are transformed).
- Multifunctional use is valued (But is the design always ready for this? The current sophisticated space used for sport does not offer aesthetic solutions for other uses.)
- Multisport use is also valued (but the current tendency is just the opposite).
- Some adaptations of stadiums turn out to be value elements (see the Melbourne Complex).
- The surroundings play an important role in the significance of the stadium (but the value of Olympic stadiums as tangible heritage within their urban context has not been studied deeply).
- The uniqueness of the Olympic Games is very important. Their preparation and celebration play a decisive role in a stadium's significance, combining intangible values as well as additional social or historical events, citizen participation and political support.

Use values are often mentioned as an important heritage element for stadiums but economic factors do not appear as a relevant element. Another particularity of listed stadiums is: heritage qualities are not limited to aesthetics; the societal role is far more important. However, aesthetics can often be inspired by the classical ideal of beauty: An example is the neoclassical architectural elements at the Los Angeles stadium or the neoclassic functionalism of the Berlin stadium façade. And, an interesting example is in Munich's Olympic Park:<sup>16</sup> one can recognise the logarithmic spiral, the symbol of harmonious growth, as a subtly elegant message from Frei Otto (Fig. 3).

In several cases regional and urban planning institutions and universities have promoted the nomination of a stadium as heritage. Quite curiously, sports institutions or organisations have usually refrained from becoming part of this process. However, and most importantly, the value of all the Olympic stadiums as a historic ensemble is not mentioned in any of the listing decisions. This ensemble should be considered an exceptional Olympic heritage.

In summary, this analysis shows the need for specific criteria to evaluate the heritage of Olympic stadiums because of the particular interconnection between the history of architecture and the history of sport and the interplay between use and heritage values.

### Conservation and conversion

As mentioned before, sporting heritage is special because it is particularly interdependent with the city, the environment and the events.

Historically, the Olympic stadium is a cultural space and its interpretation requires understanding the relation of the space with the site or the city where it is located. This is an

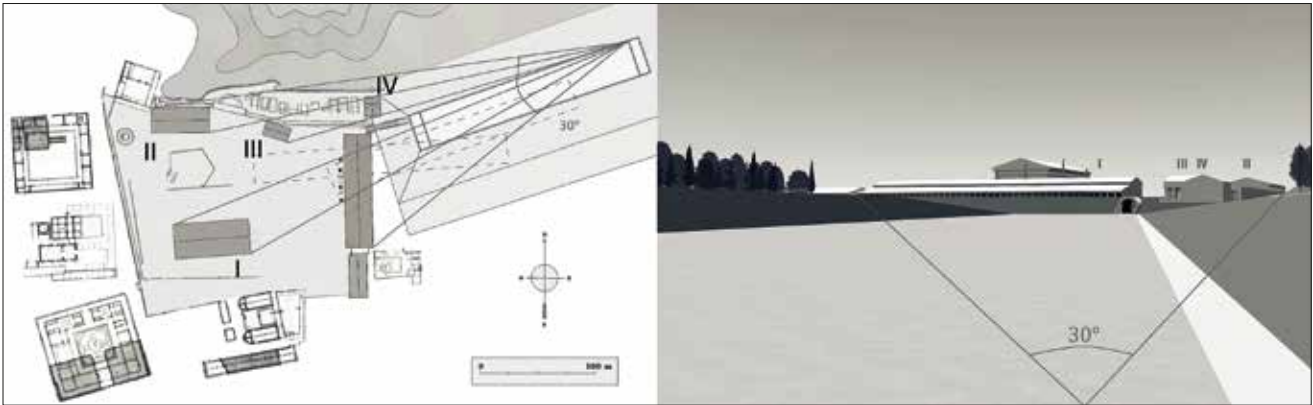


Fig. 5 Dialogical architecture, Olympian stadium in the Hellenistic period (2013, 2019)

essential contextual variable for assessing its cultural significance. Our typology of “The relation between Stadium – City configurations” helps complete value studies (Fig. 4). This relation with the surroundings varies over history and the periodisation proposes a six-stage typology, starting with the stadium of Olympia in the Hellenistic period:

- A. The stadium of Olympia (Hellenistic period): its dialogical architecture highlights the cultural space of the stadium.
- B. U-shaped stadium configuration: more than functional, it is a cultural space.
- C. Arena-like configuration: closed structures (Roman amphitheatres) (London 1908; Amsterdam 1928, Wembley 1948) with urban landmark: main entrance, Marathon gate; other elements are a link to the city.
- D. Stadium in a park that marks the transition to the city (Berlin 1936). A balcony dominates the arena-like configuration and connects the indoor space with its surroundings; this gives identity to the space (see Fig. 6).
- E. Arena-like structure with homogeneous façade (Rome 1960) and without an urban landmark: only the smooth slope of the tribunes opens the stadium towards the surroundings.
- F. The stadium “object” (Sydney 2000) was born with the generation of multi-functional buildings; safety and comfort dominate design parameters at the cost of the cultural dimensions of its spaces.

The present stadiums are usually understood as “buildings” representing “objects” or “icons”. It is often difficult to imagine the space used for sport from the outside of the stadium. Precisely the stadium space is the most relevant part of the stadium. Today it is simply an “internal court” that solves technical needs. This means the stadium lacks the possibility to truly integrate itself with the environment. As can be seen from this periodisation, the stadium’s integration into a city is made more difficult by its progressive isolation from the city over time due to its architecture and spatial organisation,<sup>17</sup> with one exception after the 1960s: the Munich Olympic Stadium and Park.

Here it is interesting to draw attention to an important fact: the configuration of the Olympian stadium in the Hellenistic period used principles of visual perspective and

concepts of dialogical architecture (Fig. 5). The establishment of the stadium of Olympia outside the sacred rectangle of the Altis is often interpreted as a departure or “separation” of the stadium from the built environment. Although the stadium is effectively further distanced from the Altis, it still remains in visual and physical communication with it. The stadium configuration is probably one of those cases in which the interaction between immobile space and athlete’s bodies in movement have been best considered. The stadium of Olympia is a symbolically configured space that gives an identity to the whole stadium. This stadium has taught us a lesson of an architecture of the void that highlights the stadium’s cultural space, but we never realised it until recently.<sup>18</sup> We consider this message from Antiquity as a principle that could be part of the archetypal definition of the Olympic stadium and reinterpreted in modern stadiums.<sup>19</sup>

Olympic stadiums need to be designed and understood as a cultural amenity. Greater permeability between the stadium space and the city, in the spirit of a dialogical approach to architecture and urban planning, may inspire new more sustainable design solutions.



Fig. 6 Olympiastadion Berlin, one of the few times that non-sport function and stadium space aesthetics merged in harmony (photo June 2018)

Stadiums constitute a real challenge in terms of conversion. They are so optimised for a specific event that they cannot easily be changed. Conservation can be facilitated by considering the adaptive re-use and conversion of the stadium at the design stage.<sup>20</sup> Flexible design will help this re-use. It is important for the stadium's best conservation and requires new technological advances,<sup>21</sup> specific research and re-thinking the Olympic stadium concept. Thus, aesthetics in a stadium could become more relevant for heritage listing, and work with functional values (Fig. 6).

### ***Can cultural heritage benefit sports facilities, sites and the Olympic Games?***

The need for systematic knowledge in the field of emblematic sports facilities and events is clear. More research is also required taking into account the evolution in the selection criteria for cultural heritage. Academic education and research on emblematic sports facilities are a natural complement to the study of cultural heritage.<sup>22</sup> The recognition of sports heritage facilities, such as Olympic stadiums, could improve strategies for urban regeneration and help to increase their urban dimension. Heritage could contribute to enhancing use values through Olympic tourism and programmes. The specific interactions of tangible and intangible values deserve detailed studies involving heritage experts.

Considering the ensemble of Olympic stadiums as a unique heritage would help to increase the protection of individual buildings that are now considered of only local significance. Doing this may establish bases for protecting other facilities, such as football arenas or Olympic Winter Games sites,<sup>23</sup> or other historic sporting venues. Knowledge and initiatives in the field of cultural heritage can contribute to the completion of IOC heritage policies and requirements.<sup>24</sup> The efforts of cities to encourage, support and promote the historic Olympic legacy as cultural heritage is important because these efforts also protect the values of the Olympic Games.

Heritage recognition can change the attitude towards sports facilities by accepting historic values and not only the most fashionable architecture as the best one. Tools, education

and research that reflect cultural heritage can influence the quality of sports architecture, especially of Olympic stadiums. So, aesthetic and functional (use) values can work together. Isn't that authentic architectural quality?

The recognition of the ensemble of Stadiums of the Modern Olympic Games as World Cultural Heritage could be an exceptional opportunity to assess their cultural heritage values on the basis of collaboration among architects, historians, sports experts, etc. Such stadiums would better serve both historic memory and future needs. The recognition of the Olympic heritage can provide a tangible link between UNESCO and the IOC, two international organisations that are very much committed to dialogue between people and cultures.

### **Conclusion**

This presentation focused on the Olympic stadium of the 20th century – the most emblematic of the many Olympic sites –, its values and cultural significance and the need for specific cultural heritage criteria to evaluate historic sports facilities, in particular the architecture, site and landscape of the Olympic stadium.

Olympic stadiums are great testimonies to the evolution of sport and architecture. They should be considered an exceptional heritage, both by the international character of the event they host and by their locations all across the globe.

The reinterpretation of the Olympic stadium in connection with the Olympic Games themselves, which are considered intangible cultural heritage, would allow us to develop a better way of preserving and designing this cultural facility (the stadium).

This is a call for considering the ensemble of existing Olympic stadiums as World Cultural Heritage.

If we wish to preserve sports facilities and memories or programme a future strategy for the legacy, we believe that it is essential to mobilise project results, tools and research that reflect cultural heritage. ICOMOS is an ideal forum for this enterprise.

*Table I: Olympic stadiums of the 20th century*

<b><i>Olympic stadiums of the 20th century</i></b>	
<i>1900 Paris</i>	No stadium
<i>1904 St Louis</i>	No stadium
<i>1908 London (White City)</i>	Demolished (No sporting place)
<i>1912 Stockholm</i>	Preserved
<i>1920 Antwerp</i>	Demolished (Football stadium built in place)
<i>1924 Paris</i>	Three quarters demolished (Competition site for the Games of the XXXIII Olympiad)
<i>1928 Amsterdam</i>	Preserved
<i>1932 Los Angeles</i>	Preserved (Renovated in 1984)
<i>1936 Berlin</i>	Preserved (Covered in 2006)
<i>1948 London (Wembley)</i>	Demolished (New football stadium)

1952 Helsinki	Preserved (Renovation in 1995; 2016–19)
1956 Melbourne	Covered in 2006
1960 Rome	Preserved (Large transformation; Covered in 1990)
1964 Tokyo	Preserved until 2014 (New stadium for the Games of the XXXII Olympiad)
1968 Mexico	Preserved
1972 Munich	Preserved
1976 Montreal	Preserved (Completed in 1995)
1980 Moscow	Preserved (Two extensive renovations)
1984 Los Angeles	Preserved (Renovated in 1984)
1988 Seoul	Preserved
1992 Barcelona	Preserved (Modifications in 1991 with preserved historic façade)
1996 Atlanta	Partly demolished (Planned transformation into baseball stadium)
2000 Sydney	Preserved (The transformation of the tribunes has been planned)

Table II: Listed Olympic stadiums

<b>Olympic stadium</b>	<b>Name of the listed object</b>	<b>Year of listing</b>	<b>Type of heritage</b>	<b>Level of heritage</b>
Stockholm 1912	<i>Stockholms Stadion</i>	1990	Building	Local
Amsterdam 1928	<i>Olympisch Stadion</i>	1992	Building	National
Los Angeles 32 & 84	<i>LA Memorial Coliseum – Olympic Stadium</i>	1984	Landmark	National
Berlin 1936	<i>Olympiastadion, former Reichssportfeld, Olympic Park with former Deutsches Sportforum, and former building of the racecourse Grunewald</i>	1966	Landscape	Local *
Melbourne 1956	<i>Melbourne complex</i>	2005	Place	National
Mexico City 1968	<i>The Central University City Campus of the Universidad Nacional Autónoma de México (UNAM)</i>	2007	Site	World
Munich 1972	<i>Ensemble Olympiapark; Olympiastadion, Olympiahalle, Olympia-Schwimmbhalle, Fernsehturm, Olympisches Kirchenzentrum des Olympischen Dorfes</i>	1998 / 2011	Ensemble/Building	Local * WCH application in preparation
Moscow 1980	<i>Group of sculptures 'Zemlya' (Земля) and 'Vada' (Вода) – 1957, National (federal) Art monument (statues) Luzhniki Olympic Complex</i>	1974	Sculpture	National
Sydney 2000	<i>The Sydney Olympic Park Cauldron</i>	2000	Cauldron	Local

\* in Germany, there is only federal state heritage listing

**Abstract**

*Die Olympischen Sommerspiele des 20. Jahrhunderts haben uns ein greifbares historisches Erbe hinterlassen, insbesondere die Olympiastadien, aber ihre Erhaltung stellt eine komplexe Herausforderung dar. Genauer gesagt ist die Entwicklung von Ort, Landschaft und Architektur des Olympiastadions ein bemerkenswertes Beispiel für die Spannungen, die zwischen Kontinuität und Wandel oder zwischen Vermächtnis und Nutzungswerten entstehen.*

*Eine nachhaltige Erhaltung der Olympiastadien würde eine bessere Berücksichtigung ihrer kulturellen Bedeutung und der Anforderungen an ihre weitere Integration in die städtische Umgebung seit der Entwurfsphase erfordern. Instrumente und Forschung, die das kulturelle Erbe berücksichtigen, können bei der langfristigen Planung des Vermächtnisses helfen.*

*Die Olympiastadien des 20. Jahrhunderts sind Zeugnisse der Entwicklung von Sport und Architektur. Sie sollten als außergewöhnliches Erbe betrachtet werden, sowohl durch den internationalen Charakter der Veranstaltungen, die dort stattfinden, als auch durch ihre Standorte auf der ganzen Welt. Eine Anerkennung wäre ein bedeutender Schritt nach vorn in Bezug auf die Bewahrung von Erinnerungen, würde aber auch neue Ansätze hinsichtlich der Qualität olympischer Sportstätten eröffnen.*

**Bibliography**

- Bayerisches Landesamt für Denkmalpflege, Denkmalpflege Informationen Nr. 150 (November 2011), p. 50 (accessed in November 2019).
- Constantinos A. DOXIADIS, *Architectural Space in Ancient Greece*, Cambridge, MA and London 1977 (initially, published in German: *Raumordnung im griechischen Städtebau*, Heidelberg 1937).
- Comité International Olympique (CIO), *Charte olympique*, point 1, p. 11, 2018.
- Comité International Olympique (CIO), *Agenda 2020 du Comité International Olympique*, 2015.
- Gemma ABERCROMBIE (ed.), *Repositories of Memory*, in: *Sustaining Memory: Sporting Heritage*, *Conservation Bulletin* 68, no. 2 (2012), 2.
- ICOMOS, *Decision – 13COM XV.A – The World Heritage Committee: The ICOMOS recommendation*, *World Heritage List* 517, (1988).
- ICOMOS, *Approved report of the State Party: 1250 University City (Mexico). Campus of the Universidad Nacional Autónoma de México (UNAM)*, (2007).
- Miranda KIURI, *Les équipements emblématiques des jeux Olympiques : De l'héritage au patrimoine culturel*, in: M. ATTALI (dir.), *L'héritage social d'un événement sportif. Enjeux contemporains et analyses scientifiques*, Rennes 2020 (in press).
- Miranda KIURI, *The Stadium of Olympia*, in: Konstantinos GEORGIADIS (ed.), *Olympic values: Respect for Diversity*, 54th International Session for Young Partici-

- pants, International Olympic Academy and International Olympic Committee, Athens 2015, pp. 109–120.
- Miranda KIURI, *Estadio olímpico, Espacio cultural – un lugar de la memoria*, *Cuadernos de pensamiento*, Madrid 2009, 100 p.
- Miranda KIURI, Sigrid REITER, *Olympic Stadium Design: Past Achievements and Future Challenges*, in: *IJAR: International Journal of Architectural Research*, vol. 7, issue 2 (2013), pp. 102–117.
- Miranda KIURI, Jacques TELLER, *Olympic Stadiums and Cultural Heritage: on the Nature and Status of Heritage Values in Large Sport Facilities*, *International Journal of the History of Sport*, DOI: 10.1080/09523367.2015.1037745 (2015).
- Miranda KIURI, Jacques TELLER, *The Stadium of Olympia: a Dialogical Composition. Architecture, Phenomenology and Social Dialogics*, in: *International Architectonics Journal*, No. 27, Barcelona 2015, pp. 253–265.
- Miranda KIURI, Jacques TELLER, *Olympic Stadiums in their Urban Environment: A Question of Design and Cultural Significance*, in: *The Journal of Cultural Heritage Management and Sustainable Development*, 2(2), (2012), pp. 115–129.
- Landeshauptstadt München, Referat für Stadtplanung und Bauordnung, *Welterbe Olympiapark, Stadtratshearing der Landeshauptstadt München*, November 2017, p. 4. and p. 14.
- Tom LEDDY, *Dialogical Architecture*, in: H. M. Michael and B. V. Rodopi (eds.), *Philosophy and Architecture*, Amsterdam 1994, pp. 183–199.
- Bayerisches Landesamt für Denkmalpflege, *Regierungsbezirk Oberbayern, München (Stadt), München. Baudenkmäler - Stand 15. 11. 2019* (accessed in November 2019). <https://www.blfd.bayern.de/>
- Randall MASON, *Assessing Values in Conservation Planning: Methodological Issues and Choices*, in: M. de la TORRE (ed.), *Assessing the Values of Cultural Heritage*, Los Angeles 2002, pp. 5–30.
- Kenneth POWELL, *Wembley – Myth or Monument?*, in: *Sports – Sites – Culture (ICOMOS – Journals of the German National Committee XXXVII)*, Munich 2002, pp. 66 ff.
- Thomas SCHMIDT, *Olympiastadien der Neuzeit – Entwicklungslinien einer Bauaufgabe des 20. Jahrhunderts*, in: *Sport – Stätten – Kultur. Historische Sportanlagen und Denkmalpflege (ICOMOS Hefte des Deutschen Nationalkomitees XXXVIII)*, München 2002, pp. 21–28.

**Credits**

Figs. 1–3, 5–6 Miranda Kiuri  
Fig. 4 Kiuri and Teller

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- <sup>1</sup> SCHMIDT, Olympiastadien, 2002; KIURI and TELLER, Olympic Stadiums and Cultural Heritage, 2015.
- <sup>2</sup> ICOMOS, 1988; KIURI, Estadio olimpico, 2009; KIURI and TELLER, The Stadium of Olympia, 2015; KIURI, The Stadium of Olympia, 2015.
- <sup>3</sup> IOC, 1999, p. 40.
- <sup>4</sup> IOC, 2015. R1, point 2.
- <sup>5</sup> CIO, 2018, p. 11.
- <sup>6</sup> On March 19, 1998, the Bavarian State Office for the Preservation of Monuments included Munich's Olympic Park as an ensemble as well as the Olympic Stadium, the Olympic Hall, the Olympic Swimming Pool, the TV Tower as individual monuments in the list of monuments. The Ecumenical Church Center of the Olympic Village was added to the list of monuments in 2011 (Bayerisches Landesamt für Denkmalpflege, 2011, p. 50; Landeshauptstadt München, Referat, 2017, p. 4. and p. 14.)  
E-1-62-000-70 (S.2) Ensemble Olympiapark; D-1-62-000-7893 (S.192) Olympia-Schwimmhalle; D-1-62-000-8458 (S.329) Olympisches Kirchenzentrum des Olympischen Dorfes; D-1-62-000-7890 (S.736) Fernsehturm; D-1-62-000-7891 (S.737) Olympiastadion; D-1-62-000-7892 (S.736) Olympiahalle. (Bayerisches Landesamt für Denkmalpflege. Regierungsbezirk Oberbayern, München (Stadt), München. Baudenkmäler – Stand 15. 11. 2019.
- <sup>7</sup> KIURI and TELLER, Olympic Stadiums and Cultural Heritage, 2015.
- <sup>8</sup> POWELL, Wembley, 2002; KIURI and TELLER, Olympic Stadiums and Cultural Heritage, 2015.
- <sup>9</sup> MASSON, Assessing Values, 2002; KIURI and TELLER, Olympic Stadiums and Cultural Heritage, 2015.
- <sup>10</sup> The heritage values proposed by Riegl in 1903 are: age, historic, commemorative, use, and newness. Ignacio González-Varas summarised the evolution of heritage values through history, based on Riegl's work: (1) age (antiquity and abstract beauty), (2) historical evolution and emotional values, (3) commemorative values, and (4) contemporaneous (use) values. The Burra Charter of Australia ICOMOS (1999) names: aesthetic, historic, scientific, and social (spiritual/political/national) values. Mason in 2002 grouped heritage values into two main areas: sociocultural and economic values. (KIURI and TELLER, Olympic Stadiums and Cultural Heritage, 2015, p. 3).
- <sup>11</sup> KIURI and TELLER, Olympic Stadiums and Cultural Heritage, 2015.
- <sup>12</sup> KIURI, Estadio olimpico, 2009; ABERCROMBIE, Repositories of Memory, 2012; KIURI and TELLER, Olympic Stadiums and Cultural Heritage, 2015.
- <sup>13</sup> KIURI and TELLER, Olympic Stadiums in their Urban Environment, 2012.
- <sup>14</sup> KIURI, Estadio olimpico, 2009; KIURI and TELLER, Olympic Stadiums and Cultural Heritage, 2015, p. 4.
- <sup>15</sup> KIURI and TELLER, Olympic Stadiums and Cultural Heritage, 2015; KIURI and REITER, Olympic Stadium Design, 2013.
- <sup>16</sup> KIURI, Estadio olimpico, 2009, p.172.
- <sup>17</sup> KIURI and TELLER, Olympic Stadiums in their, 2012, p. 127.
- <sup>18</sup> KIURI and TELLER, Olympic Stadiums in their, 2012; KIURI and TELLER, The Stadium of Olympia, 2015.
- <sup>19</sup> KIURI and TELLER, The Stadium of Olympia, 2015; DOXIADIS, Architectural Space, 1972; LEDDY, Dialogical architecture, 1994; KIURI, The Stadium of Olympia, 2015; KIURI and REITER, Olympic Stadium Design, 2013.
- <sup>20</sup> KIURI and TELLER, Olympic Stadiums in their, 2012, p. 126.
- <sup>21</sup> Most of the modern Olympic stadiums are an example of innovation through architecture and new technologies (KIURI and REITER, Olympic Stadium Design, 2013, p. 107; p. 114).
- <sup>22</sup> KIURI and TELLER, Olympic Stadiums and Cultural Heritage, 2015; KIURI, De l'héritage Olympique, 2019.
- <sup>23</sup> An interesting example proving the unexplored historic Olympic winter sports facilities is described by the scientific study *Héritage culturel des Jeux Olympiques d'Hiver de 1928 et 1948* (Report: Kiuri & Stricker, 2013), commissioned by the Canton of Grisons and the St. Moritz City Council Engadin Tourismus Agency, Switzerland. The uniqueness of the historic sports and two-times Olympic site, the Cresta and Olympia Bob run of Celerina - St. Moritz was highlighted through the World Cultural Heritage criteria, taking into account the interaction between tangible and intangible values. The specific contextual variables regarding historic sports facilities (KIURI & TELLER, 2012) are the basis of this scientific study. Thanks to this it was also possible to formulate a proposal for a set of cultural projects, such as a strategic project for St. Moritz, called "Winter Olympia". KIURI, De l'héritage olympique (*in print*), point. 2.3.
- <sup>24</sup> KIURI, Les équipements emblématiques des jeux Olympiques : *De l'héritage olympique (in print)*.