Challenges and key factors in planning legacies of mega sporting events

Lessons learned from London, Sochi, and Rio de Janeiro

Simona Azzali
 Faculty of Science and Engineering, James Cook University, Townsville, Australia

Abstract

Purpose – Since the 1960s, the impact of mega sporting events on the built environment has become increasingly important, and the relationship between hosting cities and events increasingly complex and controversial. The outcomes of these mega-events, however, are very discouraging, especially in terms of the state of sports venues and event sites. In many cases, Olympic parks and event sites stand abandoned once the event is over, and sports facilities are often either closed or underutilized. The purpose of this paper is to identify replicable best practices and successful examples used in mega-events to transform events sites and venues into livable public open spaces (POS), enjoyed by the local communities.

Design/methodology/approach – Three cities were selected for this investigation: London, Sochi and Rio de Janeiro. London hosted the 2012 Summer Olympics, and this study focused particularly on its Olympic park, Queen Elizabeth Park. Sochi hosted the 2014 Winter Olympics but also some of the matches of the 2018 FIFA World Cup. Rio de Janeiro hosted the 2016 Summer Olympics and also a part of the 2014 FIFA World Cup. Each case was investigated according to a methodology composed of interviews with experts, site visits, and analysis of the bidding book and post-event reports to check the consistency between promises and legacies.

Findings – The research identified a framework of six major elements that determine, or contrast, the long-term use of events sites and sport facilities, and highlighted some main attributes to consider in order to transform sporting event sites into livable and enjoyable open spaces. It is expected that this framework can be used as a guidance to deliver sustainable events and long-term legacies and to define a strategy for optimization of planning mega sport events.

Practical implications – Mega events provide near-unique, fast track opportunities for urban transformation. This research can be used as guidance for the overall mega sporting events stakeholders, such as the IOC, FIFA, and local organizing committees, to identify replicable best practices and successful examples in the leverage of mega events to transform events sites and venues into livable POS.

Originality/value – Why is it so difficult to transform event sites and sport venues into livable areas of cities? What are the recurrent mistakes, issues, and challenges that hosting cities have to face? This research is unique as it aims at answering these questions by defining a framework of relevant factors for hosting cities to help them in the planning of mega sporting events. The research also highlighted some recurrent mistakes, such as the exorbitant costs of a mega event, the inability to keep the initial budget unchanged and the difficulty to adjust plans to local needs.

Keywords Olympic Games, Mega sporting events, Event sites, Livable open spaces, Sport venues, Sustainable legacies

Paper type Research paper

Introduction

Sporting events have been taking place for a very long time, and they are rooted in our history. However, since the 1960s, the relationship between hosting cities and mega-events has become more complex, and their impact on the built environment more substantial. Many scholars define the 1960 Olympic Games in Rome as the first example of a sporting event used intentionally for urban redevelopment purposes (among others: Whitson, 2004; Smith, 2010).
Since the 1960s, events have also grown in terms of numbers of athletes, spectators, costs, and number and specialization of the sports facilities. To illustrate this point, the first Olympic Games in contemporary history, Athens 1896, lasted just one week and saw the participation of 14 countries in 43 events with a total of 241 male athletes. On the other hand, the 2012 London Olympics included 26 sports, 39 disciplines, and 34 venues. About 10,500 athletes from 204 National Olympic Committees took part in the Games, and the tickets available were about 10m (IOC, 2014). The same occurred in the FIFA World Cup. It was held for the first time in 1930 in only one city, Montevideo, in Uruguay. The tournament involved 13 teams and utilized three stadiums only. In contrast, Brazil 2014 included the participation of 32 teams, 12 stadiums and 12 hosting cities spread throughout the country (FIFA, 2015). The 1960s proved to be a dividing line in the management of mega sporting events, particularly the Olympics. From that time onwards, Olympic Games were viewed as tools for the regeneration and urban transformation of hosting cities. Rome first (1960) and Tokyo then (1964) leveraged the occasion of the Games for the realization of massive schemes of urban redevelopment, including transportation, road networks and other major infrastructure (Essex and Chalkley, 1998; Smith, 2012). Barcelona 1992 was another milestone in the history of mega sporting events. The games were the occasion for revitalizing declining parts of the city and regenerating entire brownfield areas (Pitts and Liao, 2009).

In the last decades, cities have begun to increasingly compete among each other to host international sporting events; however, recent experiences show that the outcomes from staging major events are mostly harmful and their legacies planned to last only a short time. This trend is even stronger if one looks at how sports facilities and their surroundings are utilized once the event is over. Usually, sports venues become white elephants, and event sites, as the Olympic parks, become isolated islands, and underutilized and abandoned pieces of cities. Examples of these disasters include the 1976 Olympics in Montreal, which ended with an economic fiasco and the city becoming bankrupt; Athens 2004; Sochi 2014 Summer Games, which, with an overall expenditure of about US$55bn (Müller, 2014), ended in costing more than all the Winter editions together; the World Cups of South Africa 2010 and Brazil 2014; the Olympics in Rio de Janeiro, where the city was declared bankrupt a few months before the beginning of the games (Guanella, 2016), and some of the sports venues built for the Olympics are in a state of abandon only a few months after the Games. Why is it so difficult to transform event sites and sport venues into livable areas of cities? What are the recurrent mistakes, issues and challenges that hosting cities have to face? This research aims at answering these questions by defining a framework of relevant factors for hosting cities in order to help them in the planning of mega sporting events, and transform events sites into livable public spaces enjoyed by local communities.

The value of public open spaces in urban centers
Public spaces usually refer to different types of urban spaces such as parks, streets, sidewalks, plazas, malls, beaches and other gathering places. Open spaces provide the common milieu where people can coexist peacefully, communicate, and undertake different activities. Many scholars have attempted to study public open spaces (POS) and their components. Researchers and practitioners from different areas, including planners, architects, sociologists, environmental psychologists, anthropologists and others, have investigated these spaces. Mitchell (1996, p. 128) described POS as “those spaces in cities […] that are publicly owned and have always been used by citizens to gather and communicate political ideas.” Open spaces are also defined from a functional perspective, with scholars defining them as behavioral settings in which individuals and groups carry out certain actions, which involve interaction with the physical environment. In these settings, spaces also evoke certain reactions, both consciously and unconsciously (Gehl, 1987). Woolley (2003) defined a public space as an area that is shared with strangers, and a common place for enjoyment, gathering, politics, religion, commerce
and sport. Its character expresses conditions of civic culture, public life, and everyday discourse. Woolley viewed open spaces as a crucial factor in the development of sustainable cities. The many benefits derived from good open spaces are explored in great detail, including social, health, environmental and economic benefits. Francis (1989) clarified that open spaces provide several benefits for different residents in a community. The range of benefits can cover the natural, social and economic fields as follows: natural/environmental benefits (i.e. preserving biodiversity), social (i.e. socializing and healthiness) and economic profit (i.e. tourists attraction). Seminal contributions from Gehl (1987), Francis and Marcus (1998), Whyte (1980), and other scholars, based on their studies of social and psychological factors in open space design, have shown that good public spaces are ones that are accessible and diverse, well-utilized by a wide variety of persons, and involve diverse activities.

POS are often related to the concept of livability and quality of life. Badland et al. (2015), for example, identified them as one major aspect of livability, as confirmed by Lowe et al. (2013, p. 11) who described livability as “safe, attractive, socially cohesive and inclusive, and environmentally sustainable; with affordable and diverse housing linked to employment, education, public open space, local shops, health and community services, and leisure and cultural opportunities,” including open spaces as a major factor. POS are thus essential for the enhancement of urban life quality, and they are associated with health and well-being of local residents (Villanueva et al., 2015). To illustrate this point, Whyte (1980) stated that one can measure the health of cities by measuring the vitality and energy of their streets and POS. Having successful, convivial and livable open spaces offer numerous benefits to different residents in a community. This range of benefits covers environmental benefits (i.e. preserving the natural environment), social outcomes (e.g. socialization and healthy living) and economic benefits (e.g. tourism). High-quality open spaces are the ones that are inclusive, sociable, and accessible.

Some scholars attempted to classify or define indicators in order to assess the quality of urban spaces. For example, Villanueva et al. (2015) tried to identify the best POS indicators to assess and evaluate the progress toward achieving a range of policy and health and well-being outcomes, while Carmona (2010) identified the major dimensions of urban public spaces, including perceptual, social, visual, functional and morphological. These factors are interrelated and influence each other, and help in understanding and evaluating POS. Others, as in Al-Maimani et al. (2014) and Salama and Azzali (2015), created a categorization of attributes of urban open spaces which were divided into three main areas: functional, social and perceptual attributes. Regardless of how they are analyzed and categorized, public spaces play a key role in people’s lives. POS are important gathering places and they promote social life. In this sense, mega-events could be leveraged to create new sustainable and livable open spaces within cities by transforming event sites, such as the Olympic parks, into spaces for the enjoyment, relaxation and amusement of local communities.

Assessment of mega sports events and open spaces

The hosting of mega events can have a tremendous impact on cities. These effects can be positive in terms of job opportunities, economic return, skills development, and city rebranding, but they can be harmful because of their environmental footprint, as via the carbon emissions caused by international visitors.

Mega events, as Olympic Games and Expos, always have a wide impact: they create post-event usage debates, re-prioritize urban agendas, often stimulate urban redevelopment and they are tools for accelerating economic expansion (Malfas et al., 2004). Major events increasingly serve as a trigger for investments and infrastructure improvements. Sports venues themselves are often regarded as a catalyst for the overall redevelopment of a given city district, including new residential and office space, retail facilities and parking, etc.
Recent trends in mega events planning demonstrate that World Cups and other major sporting events are moving faster and faster to greater forms of sustainability, learning from one hosting city to another (FIFA, 2015; IOC, 2014). Recent hosting experiences suggest that it is possible to reap benefits from staging the event, demonstrating that sporting events can lead to urban regeneration, bring environmental benefits and boost local economy. The transformational effect of a sporting event has incredible potential to transform cities into more environmentally friendly, socially equitable, and economically developed areas. However, it is only through the implementation of a purposeful, forward-looking, strategic and well-thought plan that these outcomes can be achieved (Musco, 2012).

The academic literature on mega sports events is vast and diverse. One section of it has focused specifically on measuring the environmental impacts of them. The Winter Olympic Games held in 1994 in Lillehammer is considered the first international sports event to take up the sustainability challenge and seek to host sustainable games (DEAT, 2010). The unsuccessful 2004 Cape Town Olympic Bid was the first to include an environmental assessment in its design, and this has now become a standard requirement for Olympic bids (Death, 2011). Since then most international events have tried to include some environmental impact assessment, as the 2000 Sidney Olympics. London 2012 was the first Olympic city to have a legacy plan already in execution before the Games, and since then all hosting cities are requested to have a legacy plan in their bid book.

There are two main key drivers for designing and developing a sustainable event: first, the mitigation of the direct environmental impact, or footprint, of the event (e.g. waste and water treatment, carbon emissions and energy consumption); second, the potentiality offered by events to trigger a shift toward more sustainable transformations and long-term legacies (Death, 2011). For the first driver, the literature has been dominated by technical and scientific research that attempts to define event emissions footprints, or input–output modeling of events (Collins et al., 2009). Regarding the second driver, recent trends in mega events planning demonstrate that the World Cups, Olympics, and other major sport events are moving faster and faster toward wider forms of sustainability, regularly improving and learning from one hosting to another. Cities such as Barcelona, London and Lisbon have been transformed positively through the staging of international events. However, looking at the experiences of urban transformations related to major events, the situation is quite heterogeneous: in some cases it took several years to start the re-use of infrastructures; in other cases the result was extremely lower than expected; and in others again there were negative effects on the urban community. For London, staging the Olympics had beneficial effects, while for Montreal and Athens the Olympic legacy was unsuccessful, and it is mainly seen in the form of debt. In general, the need for assessing the relationship between costs and long-term benefits, and the necessity of an overall strategic plan represent the first elements to be put on the agenda for staging a major event (Musco, 2012), and planning long-term legacies is the first step in achieving sustainable goals.

In the last years, hosting cities have started including notions of sustainability in their legacy plans, mainly to justify the expenditure of taxpayers' money in the mega-events' planning and execution (Smith, 2009). However, usually, the academic studies did not undertake any comprehensive approach and investigated only one main impact at a time, with a focus especially on the economic impact (Allmers and Maennig, 2009; Burgan and Mules, 1992; Crompton, 1995; Gratton et al., 2009; Preuss, 2005), social legacies or city rebranding (Raco, 2004; Smith, 2009). Other research has also analyzed some environmental issues (Chappelet, 2008; Levett, 2004), or the impact on urban development (Liao and Pitts, 2006; Pillay et al., 2009; Pillay and Bass, 2008). Smith (2009) defined guidelines for hosting cities that wish to maximize the sustainable legacies from the staging of mega sport events; Frey et al. (2008) focused their research on the impact on local development, while Essex and Chalkley (2015, August 18) explored how to leverage sports events for urban regeneration and renewal purposes.
Finally, Preuss (2007) emphasized that there are three main issues researchers need to face when assessing legacies: the difference between gross and net legacy, the assessment of legacies over-time, or the decisions concerning the positive and negative contributions of legacies. Other scholars focused their research on the utilization of World Cup venues and stadiums. To illustrate, Alm (2012) developed the World Stadium Index (p. 3), which considered 75 facilities in 20 different countries, while two years later, Preuss et al. (2014, p. 88) implemented the Stadium Utilization Index that represents the annual demand of a venue divided by its capacity. However, in spite of how legacy is measured or defined, one cannot find any holistic or comprehensive studies on how to transform event sites, such as Olympic parks or stadiums surroundings, into liveable and sustainable public spaces.

Methodology
This paper is the result of a research carried out on mega sporting events and their impact on the built environment. The aim of the study was to examine contemporary cases in order to identify replicable best practices and successful examples in relation to the post-event management of site venues and site events. The research identified major elements that determine, or contrast, the long-term use of events sites and sport facilities, and highlighted the main factors to consider in order to transform event sites into livable and enjoyable open spaces. Three cities were selected for this investigation: London, Sochi and Rio de Janeiro (Table I). London hosted the 2012 Summer Olympics, and this study focused particularly on its Olympic park, Queen Elizabeth Park, in Stratford, which is on the east side of London. Sochi hosted the 2014 Winter Olympics but also hosted some of the matches of the 2018 FIFA World Cup in the same stadium built for the Games. Rio de Janeiro hosted the 2016 Summer Olympics and also a part of the 2014 FIFA World Cup. The spaces in Rio de Janeiro included in this research were the neighborhood around the Maracanã stadium and the Olympic Park in Barra da Tijuca, a new development on the west side of the city.

These three cities were selected because these are recent cases, these hosting cities were the first ones with the requirement of a legacy plan in their bid book, which was imposed by the International Olympic Committee (IOC) beginning from the 2012 Games, they cover all the most relevant sporting events (Winter Games, Summer Olympics and FIFA World Cups), and they also consist of different types of cities (small and big, developed, and developing urban centers). Each case was investigated according to a methodology composed of interviews with experts, site visits, and analysis of the bidding book and post-event reports to check the consistency between promises and legacies. A total of 25 semi-structured interviews (nine in London, nine in Sochi and Moscow and seven in Rio de Janeiro) with experts in the field were performed between May 2015 and December 2016. Interviewees were selected from the academia, industry, private sector (e.g. engineers, architects, planners), and local governance (e.g. political governance and event governance as organizing committees), choosing among professionals involved in the planning and/or management of these events. The aim is to acquire a deeper knowledge on the main issues related to legacies, main strengths and pitfalls of each event, main best practice that can be replicated, if any. Here, the main focus is on governance.

The list of questions, sent by e-mail few days before each interview, covered three main topics; first, experts were asked to give a personal definition of legacy and its most important components (i.e. time, beneficiaries, economic impact and social inclusion); second, they were asked to describe their experience and involvement in the planning of the event, highlighting best and worst practices as well as main pitfalls and achievements with regard to legacies, event sites and sport venues. Finally, they were asked to comment on the opportunities and challenges that different types of cities (i.e. developing vs developed cities, small vs big urban centers) face because of the hosting of mega sport events. Also, they were asked to explain how different types of events (i.e. Olympics vs World Cup) can promote or discourage the development of beneficial legacies and the development of livable public spaces from
event sites. Interviews were recorded, and answers were analyzed using content analysis to classify and determine recurrent strengths, best practices, issues and challenges. The results from each city were eventually compared with each other. The interviews allowed acquiring information, especially with regard to event governance, management and planning. Also, the involvement of experts belonging to different fields of expertise was useful to avoid bias in the collection and interpretation of the data from the site visits.

The site visits utilized a methodology consisting of a mix of behavioral mapping, direct observations and walking through analysis that were performed in the selected spaces. The aim of the site visits was to collect data and information about the physical and social components of the spaces, particularly about the quality of the built and natural environment, type of people frequenting the spaces, and activities performed. For each space, a set of relevant points (between 10 and 12 for each area) was selected. Subsequently, a series of site visits were scheduled across different times and days over a period of a week. Each visit consisted of a tour through the selected points. The starting and ending times were inverted every day to cover all the time slots in all the points. The focus here is mainly on the physical and social components of the space. The method is partially derived and adapted from Salama et al. (2013) and Salama and Azzali (2015).
Content analysis was used to categorize and classify the data collected. Indeed, the data were coded and divided into similar themes and subthemes. This method allowed covering the economic, social and cultural, physical and environmental, and governance-related legacies of the cases selected. A comparative analysis of the data from the three cases was then performed, with the aim of mapping common issues and practices, and also to generate a set of factors that can help future hosting cities in the assessment of their event sites and sports venues. The factors, results of the comparative analysis, are presented in the next sections of the paper.

The result of this work is a list of six key factors that aims at providing guidance to hosting cities in the planning of a mega sport event and in the planning of the post-event use of sports clusters. The list particularly intends to be a moment of reflection on the identity and role of sports venues and event sites. Cities, especially in emerging countries, are increasingly interested in bidding and hosting mega-events, and it has become strategic to implement strategies that allow maximizing the benefits from their stage, and planning and implementing positive, sustainable and long-lasting legacies.

Evaluating sports event sites: key points and factors to consider

The list proposes six main attributes in the form of opposite terms (Table II). The factors are as follows: temporary vs permanent infrastructure, already existing vs new structures, integration vs divergence, public vs private, local needs vs event needs, and high vs low responsiveness to unplanned or unintended events.

The following paragraphs present a description of each attribute, followed by explaining examples from the three main cases (London, Sochi and Rio de Janeiro).

Temporary vs permanent (infrastructure)

The first important factor to consider in the event site planning is the balance between ephemeral and permanent infrastructure and components. Contemporary events are characterized by an increasing complexity, gigantism (Preuss, 2007), and high specialization of venues; as suggested by many interviews, they could benefit from the greater use of temporary facilities. Ephemeral solutions were often used in the management of past events. To illustrate this point, and to avoid oversized and underutilized venues, the ancient Romans used to first build temporary event venues usually made of wood. Only at a later stage, were they transformed into permanent structures usually made of stone. This is the case of the famous Coliseum, and the introduction of the amphitheater as a new building type (Carcopino, 1939). Also, during the Renaissance and the Baroque (XVI and XVII centuries), in many Italian cities, on the occasion of the main tournaments and jousts, temporary wooden terraces were built and cities become the background for these events. Events and festivals were not generally held in special venues, but at city centers (Zorzi, 1977). Public spaces were used as outdoor theaters, and streets and squares became stages where citizens were involved in the celebrations. Temporary structures were used to transform the everyday environment. In addition, these devices were used as tools for experimenting with new patterns and solutions that in some cases were then transformed into permanent parts of the city.
With reference to the cases analyzed, Queen Elizabeth Park contained six major venues during the games, one of which (the basketball arena) was completely dismantled after the Olympics. The site visits showed that all other facilities were downscaled and reduced in capacity. Permanent and new venues were built only where necessary (in combination with the use of already existing and temporary facilities in other parts of the city), and planned to be open and utilized by local communities. In addition to sport facilities, the most important permanent legacy is the park itself, which is a new 226 hectares green lung with cycling and pedestrian pathways, cafes, sports venues and events conducted all year long.

In the case of Sochi, all the sports venues of the Adler Olympic Park were permanent and built from scratch, and no exiting or temporary facilities were planned or utilized. Although there existed some vague ideas on their use after the Games, no concrete plans were conceived to downscale or dismantle part of the facilities, and now all the venues are over-capacity (Azzali, 2017a). Also, site visits showed that the park is now divided into two halves by the F1 track, making it impossible to move easily from one side of the park to the other.

Similarly, the Olympic park in Rio de Janeiro (Barra da Tijuca) is a new development with nine sport facilities that were supposed to be transformed into an Olympic Training Centre, although works for their reconversion did not ever begin and the park lies abandoned. Also, interviews highlighted a dramatic issue, this Olympic edition is represented by the displacement of the inhabitants of Vila Autódromo, a favela located in the area of the Olympic Park. Although in the 1990s the residents had obtained the right to use the land for 99 years, the authorities cleared the area to build the park.

New vs already existing (infrastructure)

Too often, mega sports events generate white elephants and underutilized or abandoned venues. Strongly related to the previous point, hosting cities should consider balancing accurately new and already existing infrastructure in their plans, with reference to both sports venues and city infrastructure (i.e. transport and mobility system, and tourism infrastructure). Hosting cities should maximize the use of existing facilities, and new developments should be planned carefully considering their use in the long run. In this sense, the new “Agenda 2020,” which was approved by the IOC in December 2015, represents a step forward. Indeed, this roadmap made of 40 recommendations includes important novelty regarding the upcoming nominations to the Games. Changes include a bidding cost reduction and modifications in the candidature procedures. Cities will be allowed to present a proposal that is in line with their long-term planning strategy regarding sporting, economic, sustainable and social needs (IOC, 2015).

The cases analyzed showed that strategies for the post-event development of new venues include their downscaling to reduce capacity, the use of temporary facilities and their dismantling after the event, and the reconversion to different uses. The case of London well exemplifies all these methods. Indeed, five venues in the Olympic Park were either reconverted to other uses (i.e. the Copper Box, now a multi-purpose indoor arena, utilized for handball, modern pentathlon fencing and goalball during the Games) or reduced in their capacity. For example, the aquatic center has now a capacity of 2,500 seats with an additional 1,000 seats available for major events; however, during the Games, two temporary wings were added to increase the capacity to 17,500 seats. The wings were removed to avoid the venue becoming a white elephant and also reducing costs of maintenance. The Olympic stadium was built with a capacity of 80,000 seats, which has now been downscaled to 54,000 seats.

Sochi, at opposite, built all the sports venues of the Adler Olympic Park from scratch. The majority of them are now either abandoned or underutilized. Although there were some plans for the post-Games, at least half of the venues are not currently used as planned. Some other venues were intended to be relocated after the Games, but they never moved.
With regard to the use of already existing infrastructure, good strategies include the renovation of old facilities, their upgrade (even temporary. For example, temporary seats to increase capacity could be added only for the duration of the events), or the adoption of multiple sites (poly-clustering or satellite venues) if exiting facilities are available in other part of the hosting city/country other than the main event area. Rio de Janeiro, for example, utilized four main clusters within the city. Although the main event site in Barra da Tijuca was mainly new, other clusters utilized existing infrastructure. For example, different from London 2012, where the Olympic stadium was built from scratch inside the Olympic Park, Rio de Janeiro preferred to utilize their iconic and already existing Maracanã stadium for the opening and closing ceremonies. With the only precedent of Montreal 1976 (Bender, 2013), for the second time in the history of the games, the opening and closing ceremonies were not held in the Olympic stadium, but far away from the Olympic park. In addition, with some temporary adjustment, the famous sambadrome, utilized for the celebrations of the Carnival, became the venue for archery competitions, while the area of Copacabana hosted some temporary venues, including the beach volley arena and the road and the majority of outdoor events (Rio 2016 Bid Committee, 2009).

Integration vs divergence
Event sites can foster different types of integration (or divergence), especially physical and social. Regarding their urban form (physical integration), event sites can be dense (compact) or sprawled, concentrated or dispersed (spread venues), mono or multi-clustering, and with a prevailing mono-use or mixed use. Regarding their location, they can be either central or peripheral (suburban venues). Another factor to consider is the accessibility to the event site (number and types of public transportation, parking areas and their locations, and cycling and pedestrian paths). Each of these options will influence the legacy mode, and the combination of the above components determines the level of physical integration of the area within the city, and eventually their livability.

According to Smith (2012), there are two main types of urban development led by the mega-events: one brings much-localized forms of urban development, and the focus is limited to event venues and their precincts. This is mainly the case of Sochi and Barra da Tijuca in Rio de Janeiro. The second type leads to wider forms of urban regeneration, and it happens when the development of event venues is accompanied by larger redevelopment projects. An example of this is the 2012 Olympics in London, where the local government polarized its interventions on regenerating the East London, with the aim of reducing the divide between the West and East of the city. One main problem associated with event sites is that they often allow the creation of “islands of regeneration” or “bubbles” (Carrière and Demaziere, 2002): event venues are physically separated and detached from the rest of the city, and they become an obstacle to the integration that was intended to be implemented. One of the reasons for that is that these areas are designed without any consideration of their interaction with the city and on how they will affect the surroundings. The design effort is devoted exclusively to a specific area, without examining the impact on the whole city.

With reference to social integration, event sites should foster social inclusion and convergence. However, as in the cases of Sochi and Rio de Janeiro, too often, they lead to displacement, eviction, and gentrification. Interviews showed that, in Rio de Janeiro, the area of Barra da Tijuca was transformed into the Olympic Village, and the Park is now a sanitized and gentrified area built by evicting poor people. Indeed, here, the community of Vila Autódromo was almost destroyed. As Silvestre (2012) showed, families who accepted a financial offer had their houses demolished before being relocated or receiving compensation. In addition, the compensation was usually not adequate to buy a similar house in the same neighborhood. After the Games, the Village should be transformed into...
luxurious apartments for middle/high income families, while the Park should be converted into a training center for professional athletes, de facto excluding the majority of the population to access it. The Games, with more than 60,000 people evicted in all the city (data from Interviews 1 and 3, Rio de Janeiro), led to the creation of gated, closed and controlled spaces, without tackling the real issues of the city: low education and unemployment, housing deficit, and lack of urban infrastructure among others.

Similarly, interviews in Sochi highlighted that the coastal Olympic park was built on a very poor area. The neighborhood was a home of wooden cottages and shacks, and the Games caused eviction. The people who lived there were in the best cases expropriated by the state. However, according to local administration, several buildings were not properly registered, considered illegal, and therefore taken without compensation (Konovalova, 2007). Loss of property, eviction, and increase of land price are the main results of the stage of the Olympics. In addition, the involvement of local people in sports, one of the main objectives of the Games, and the creation of new jobs were both below expectations (Azzali, 2017a).

Differently, in London, the main goal to achieve through the games was to regenerate Stratford in East London, the site of the Olympic Park and the surrounding areas. Stratford is located in the borough of Newham, which is situated 8 km east of the center of London. According to estimates (Greater London Authority, 2005), Newham had one of the highest ethnic minority populations of all the districts in the country, and its regeneration would have helped in the process of convergence identified by the local master plan (the London plan), providing East London with the same opportunities available at the wealthier West London. The Games focused on integration and convergence from both a physical and a social perspective. The aim was to return a livable open space to Londoners, integrating the park into the surrounding community, and providing a sense of ownership, pride and opportunity. The lack of accessibility and the complex topography made by rivers, islands, roads and railways were overcome with the creation of bridges, and pedestrian and cycle paths. In addition, the provision of mixed-use areas around the park and several means of transportation helped in the process of convergence with Western London. The majority of the park was located in a polluted and abandoned area, so the Games did not create displacement; however, the regeneration accelerated by the Games led to forms of gentrification, with an increase in house prices. In addition, interviews raised the issue that in London, as well as in Sochi and Rio de Janeiro, no relevant forms of public participation were introduced during the preparation of the Games. Public involvement is certainly a major recommendation for future hosting cities to achieve social balance and integration.

Public vs private

How to transform event sites into livable open spaces? Interviews raised the issue that the high number of many actors and stakeholders involved in the event planning can cause disruptions and delays; that is why the role of each category needs to be planned carefully. Indeed, national and local governments, local communities, private sectors, federations, organizing committees, events governing bodies and final users are just a part of the actors involved in the governance of a mega-events. One question that should always be asked is who will fund the event (government funds, private sponsorship, local taxes, lottery revenues and a mix of them) and who will benefit from it (governing bodies, local communities and private sector). In particular, local communities should be involved in the decisions and planning processes of public participations tools.

One interviewee mentioned the case of Los Angeles, which hosted the Summer Olympics in 1984, as a good example. Following the Montreal Games in 1978, which was totally publicly funded and represented a very negative moment in the history of the Olympics, resulting in an economic disaster and impressive debt for the city, Los Angeles focusing on existing venues and facilities, avoiding expenditure in infrastructure, using volunteers, and
reducing in this way the cost for workforce. This event was also totally funded by private investments. This edition was an unprecedented commercial success that led to the establishment of the LA84, a foundation that manages the surplus of the Games in form of Legacy (AAF, 2004; Leopkey, 2013). The Olympics did not lead to any significant urban transformation; however, the careful planning and consistent surplus created an important and positive long-term legacy that is beneficial to the city and its residents.

London 2012 was mainly funded by public funds. Indeed, the crisis of 2008 removed the majority of private investors, leaving the state with the task of covering all expenses. This was translated, among other solutions, in a council tax hike of 20 pounds per household per year, particularly unfair for low-income families. In addition, the funding for the maintenance of the Queen Elizabeth Olympic Park is a worrisome issue that the city has to face. Greater London Authority, the entity in charge of the city governance, promised sports facilities to be managed by social enterprises for the latter to be accessible to local communities. However, a major issue in the long run will be to balance costs and revenues. Where will the city collect the funding necessary to maintain the park and its facilities? How much money will be needed to maintain the park and keep it open as a public space?

Sochi Olympics ended in costing around US$55bn (Müller, 2015a), more than four times the initial budget, and more than all previous winter editions together, with the majority of it being provided by the central state. In addition, in spite of the promises of the bid book to work closely with Sochi residents, local NGOs, and local authorities, the public participation was non-existent (Müller, 2015a). All the facilities were built over capacity, and the majority of the sports venues are now closed or underutilized. The park, with the exception of the weeks preceding the F1 race, lies abandoned. The area has become an event site for tourists rather than a successful open public space for the local communities (Azzali, 2017a).

With regard to Rio, all the experts and people interviewed for this research, with no exception, expressed their frustration and anger with the Brazilian government, accused of spending public money for these events instead of schools, hospitals and other projects more needed by the Brazilian population. As Schwambach (2012) underlined, the current planning of Rio de Janeiro is mega-events oriented. Not only does it not include any form of public participation, but it also helps increasing segregation. Also, they mentioned the Brazilian government has used these events to substitute the current legislation with ad hoc rules. Rio de Janeiro municipality did not have adequate resources to host these events, and the city budget had to be readjusted, shifting many of the financial resources that could have been used for education and health to construct new sports venues (De Oliveira, 2011).

Local needs vs event needs
Too often mega-events culminate in economic disasters (i.e. Montreal Olympics 1976, Athens Summer Games 2004, the 2010 World Cup in South Africa, Sochi Winter Games 2014 and Rio de Janeiro 2016), where the interest of few private entities prevails over the interest of the public collectivity (Azzali, 2017b, 2019). The site visits showed the importance of designing for a specific site, taking into account not only local needs but also local culture, materials and traditions. However, too often, event needs prevail. Müller (2015b, p. 10) well exemplifies this concept by identifying “Event Takeover” as one of the main “symptoms” that characterize mega-events. For example, in Sochi, all the sports venues of the Adler Park were built over-capacity, but over-capacity is the new road running from the coast to the mountain. The aim was to connect the coastal with the mountain cluster during the Games, and the motorway was planned to move 20,000 people per hour. However, the total capacity of the resorts in the mountain cluster is set to 30,000 people (Capps, 2015; The Anti-Corruption Foundation, 2016).

With regard to sports venues, although stadiums are sometimes iconic architectures and highly recognizable within a city, more often they do not meet local needs in their post-tournament life. Inadequate planning, cost of maintenance, and large and over-estimated
structures transform them into white elephants, while their precincts become non-places. Indeed, stadiums are often troublesome legacies of mega-events, as they are out of scale, oversized and gigantic structures, which incur a huge cost of maintenance and do not possess a particular character.

**Low vs high responsiveness to unplanned or unintended events**

A final factor to consider is the responsiveness to unplanned or unintended events. Usually, hosting cities are awarded an event seven years in advance, and in some cases even more. During this time span, several changes can occur. Indeed, all the cases analyzed showed unexpected crisis and issues. To illustrate this point, we use the following example: the city of London was awarded the Olympics in 2005. During the preparation of the Games, first, the 2008 economic crisis hit the country dramatically. Many private investors were not able to guarantee the promised investments, and the government had to intervene with public money. In addition, there was a political change at the local level, with a change of mayor in 2008. In spite of these changes, London was able to keep its Olympic promises.

Both Sochi and Rio de Janeiro had to face an important economic crisis too. Nowadays, all the BRICS countries are under recession, and the state of Rio de Janeiro is even bankrupt. Although the hosting of the Olympics helped the touristic sector by bringing more tourists to Brazil in June 2016, the Rio governor decreed the state of economic calamity by blocking the payment of salaries of civil servants, including the police (Guanella, 2016), with major protests being held before the beginning of the Games.

Sochi shared a similar experience with the sanctions imposed by the USA and the EU in 2014. In addition, the city lies in a very turbulent area, a region where there have been numerous terrorist attacks and where recently many wars have been fought, two of which in the nearby Chechnya. To illustrate this point, we use the following example: in 2008, the war between Russia and Georgia was fought just a few kilometers away from Sochi and the Olympic clusters.

With this preamble, the main recommendations to future hosting cities would be to carefully consider the economic, political and social context that can easily change during the preparation of the event. Regulatory processes and planning, although designed carefully, should be characterized by flexibility and adaptability.

**Conclusions**

The paper analyzed three contemporary sports events with the aim of identifying best practices to maximize the post-event use of sport venues and their precincts. Indeed, the investigation led to the creation of a list of relevant attributes in the form of opposite terms that need to be carefully considered while planning event sites and sport venues (Figure 1). The list included the following factors: temporary vs permanent, new vs already existing infrastructure, local needs vs event needs, integration vs divergence, public vs private, and low vs high responsiveness to unplanned or unintended events.

The research highlighted some recurrent mistakes and bad habits, as the low proportion of temporary venues and ephemeral components, the exorbitant costs of a mega event, the inability to keep the initial budget unchanged, the prevalence of public funding, the difficulty to adjust plans to adapt to unforeseen circumstances, and the lack of attention to local needs and peculiarities. However, this study also showed that a one-size-fits-all policy that does not work for every event, organizing committee or hosting city. Indeed, each hosting city (or country) has to develop a strategy that fits their characteristics and peculiarities. Although there is not “a universal recipe” that fits indistinctly each event, the research identified the most recurrent challenges, mistakes, and malpractices, and defined a “lowest common denominator” of key factors in the planning of mega sports events and their legacies.
Figure 1. Summarizes the analysis of the three cases.

Planning legacies of mega sporting events

Sochi

Temporary
Already Existing
Integration
Public
Local Needs
High Responsiveness

Permanent
New Infrastructure
Divergence
Private
Event Needs
Low Responsiveness

Rio de Janeiro

Temporary
Already Existing
Integration
Public
Local Needs
High Responsiveness

Permanent
New Infrastructure
Divergence
Private
Event Needs
Low Responsiveness

London

Temporary
Already Existing
Integration
Public
Local Needs
High Responsiveness

Permanent
New Infrastructure
Divergence
Private
Event Needs
Low Responsiveness

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Corresponding author
Simona Azzali can be contacted at: simona.azzali@yahoo.com