Development Planning Division
Working Paper Series No. 26

Hosting an Olympic Games: Implications for the public sector

Libby Dreyer

2011

Published by

Development Planning Division
Development Bank of Southern Africa
PO Box 1234
Halfway House 1685
South Africa

Telephone: +27 11 313 3048
Telefax: +27 11 206 3048
Email: lyns@dbsa.org

DBSA Development Bank of Southern Africa

Contents

Abbreviations

AU$	Australian dollar
bn	billion
BOA	British Olympic Association
BOCOG	Beijing Organising Committee for the Games of the XXIX Olympiad
BRT	Bus Rapid Transit
CAS	Court of Arbitration for Sport
DBSA	Development Bank of Southern Africa
DCMS	Department for Culture, Media and Sport (UK)
FIFA	Fédération Internationale de Football Association
GBP	British pound sterling
GDP	gross domestic product
HOLSA	Barcelona Holding Olímpic, S.A.
ICT	information and communications technology
IF	International (Sports) Federation
IOC	International Olympic Committee
km	kilometre
KRW	South Korean won
LDA	London Development Agency
LOCOG	London Organising Committee of the Olympic Games and Paralympic Games
m	million
NOC	National Organising Committee
OCOG	Organising Committee for the Olympic Games
ODA	Olympic Delivery Authority
PFMA	Public Finance Management Act
SACN	South African Cities Network
SRSA	Sports and Recreation South Africa
US$	United States dollar
WADA	World Anti-Doping Agency
ZAR	South African rand

1. Introduction

The Summer Olympic Games, hosted every four years, represent the pinnacle of international mega-sporting events. Cities around the world, supported by their national governments, enter the bidding process in the hope of achieving the status of host city for the Games.

This mega-sporting event will, after the Rio 2016 Olympic Games, have been presented on every continent except Africa. Buoyed by South Africa's successful hosting of the 2010 FIFA Soccer World Cup there has been considerable discussion in local sporting and administrative circles as to whether South Africa should support a bid to ensure that an African city would host the 2020 Summer Olympic Games.

As with the FIFA Soccer World Cup, a primary motivating factor has been to utilise the Games as a catalyst for supporting the country's developmental vision through infrastructural and social development. Another motivation is to maximise the benefits and prestige that would accrue to the host city and host country.

The bidding process for the 2020 Olympic Games opened in May 2011 and in September 2011 the International Olympic Committee (IOC) announced the names of the cities that were formally endorsed by their national governments to bid as candidate host cities: Baku (Azerbaijan), Doha (Qatar), Istanbul (Turkey), Madrid (Spain), Rome (Italy) and Tokyo (Japan).

The earlier announcement by the South African Cabinet not to participate in the bidding process has ended speculation as to whether the country would join the initiative. The government's reason for not supporting an Olympics bid was that it is more prudent to consolidate the gains of the 2010 FIFA Soccer World Cup, and to focus the country's attention on delivering basic services to all South Africans.

Despite the wealth of international literature – which is somewhat sceptical of the developmental impact of mega-sporting events – policy makers and public sector officials continue to support the private sector and sporting fraternity in efforts to be appointed as hosts. Extensive contributions from the public sector are also required. This paper, therefore, discusses the implications of public sector support of mega-sporting events, and outlines the input needed from the public sector to ensure a successful event.

The paper also considers whether, in supporting such events, the public sector is able to stimulate further investment in economic infrastructure that is of long-term benefit to a city and nation. Various policy imperatives need to be taken into account, such as:

- Is it possible to build infrastructure for the Olympic Games that can be utilised both for the event and in support of the developmental vision of the host city and nation?
- Does infrastructure built for the Olympics have the capacity to support job creation, increase the nation's infrastructural and logistic capacity, and boost economic

development? Or do the plans simply represent the short-term interests of a particular sporting event?

- What are the long-term maintenance and developmental plans for the upkeep of infrastructure? How can affected parties (such as sporting codes or the private sector) support such infrastructure in the long term?
- How can the hosting of the Games further enhance national and regional information and communications technology (ICT) capacity? Where can the bid draw on existing capacity?
- Does infrastructure development in support of hosting the Olympic Games provide a foundation for encouraging greater urban densities and regeneration of underdeveloped areas of cities?
- How does the hosting of the Olympic Games support the development of sport and encourage higher levels of participation in a greater number of sports?

This paper provides a high-level evaluation of the key issues that policy makers and public sector officials and planners need to consider when planning to host mega-sporting events. It first outlines the bidding and decision-making processes associated with hosting the Summer Olympic Games, and then discusses the potential costs and benefits. It concludes by outlining the indicative cost considerations for the public fiscus, should it support an applicant city in the bidding process.

2. Hosting the 2020 Summer Olympics: Decision-making framework

This section investigates the bidding and decision-making processes associated with hosting the Summer Olympic and Paralympic Games. These include the timelines, process steps and key milestones that need to be reached; the IOC's regulatory framework in this regard; the decision-making criteria the IOC applies to select a potential host city; the relevant organisational structures; and the financing of the Olympics.

2.1 Timeline and process steps of the bidding process

The IOC oversees the bidding process and invites National Organising Committees (NOCs) to bid. Only one city per country, as determined by the NOC, may apply to host the Games. The relevant public authorities of the applicant city, with the approval of the country's NOC, submit the application to the IOC. The NOC must guarantee that the Olympic Games will be organised to the satisfaction of the IOC and according to its conditions.

The NOC of the applicant city's country assumes joint responsibility for supervising the city's application during all stages of the bidding process. It needs to ensure that the applicant city meets the criteria set by the IOC Executive Board, without which it will not be considered

for the Candidature Acceptance Phase. The criteria include provision of the following:

- financial guarantees for hosting the Summer Olympics
- a payment of US$500 000
- a motivation to the IOC Executive Board if the applicant city intends to host the Games outside of the preferred dates of 15 July to 31 August 2020
- written declarations setting out compliance with the Code of the World Anti-Doping Agency (WADA)
- proof of compliance with and acceptance of the jurisdiction of the Court of Arbitration for Sport (CAS) above that of the ordinary courts of the potential host country

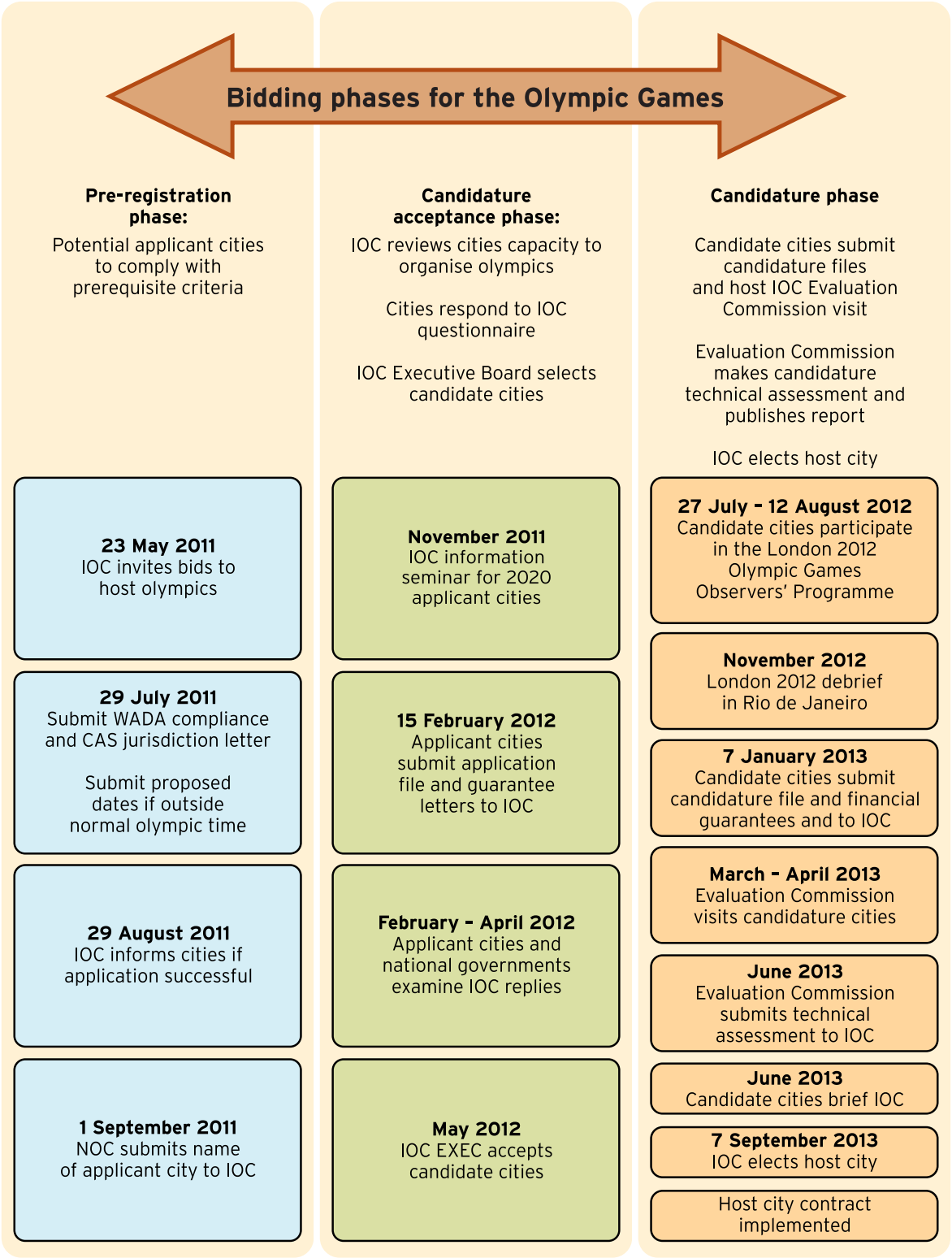
Once applicant cities reach the Candidature Acceptance Phase, they are required to submit an application file, together with letters of guarantee, and provide assurance of compliance with the Olympic Charter and the technical norms of International Sports Federations (IFs). In addition, they respond to a questionnaire that is presented to an IOC Candidature Acceptance Working Group. This working group comprises experts from IFs, NOCs, the IOC Athletes' Commission and other bodies. It is responsible for rating applicant cities on the basis of technical assessment criteria determined by the IOC Executive Board and reports to the Board on applicant cities' readiness to be selected as candidates. The final decision to select candidate cities rests with the Board.

Cities selected as candidate cities proceed to the Candidature Selection Phase. They are required to submit candidature files; to provide financial guarantees for bidding commitments; and to pay the IOC a non-refundable candidature fee of US$500 000. The IOC appoints an Evaluation Commission to undertake site visits to candidate cities and to make a technical assessment of their readiness to host the Olympic Games. After considering the Evaluation Commission's report, the full IOC finally elects the successful candidate and then enters into a written agreement with the host city and the NOC of its country. The host city contract comes into immediate effect and is binding on all parties.

The IOC timeframes and process steps for selecting the host city require that maximum cooperation be achieved between an applicant city and the NOC, which is the national department responsible for overseeing the bid. This demands effective institutional arrangements for ensuring continuity between the bidding phase and a potential subsequent planning phase. For the Rio 2016 Olympics, for example, the city's application was presented jointly by the Brazilian Olympic Committee and the federal, state and city governments of Brazil. For the London Games, a bidding committee was established which – in addition to leading the bidding process – also took responsibility as a transition team to lead operations between the awarding of the bid and the formation of the Organising Committee for the Olympic Games (OCOG).

A brief synopsis of the seven-year bidding and selection process involved in hosting the 2020 Olympic and Paralympic Games is outlined in Figure 1.

Figure 1: Bidding phases for the 2020 Olympic Games



2.2 The Olympics regulatory framework

The Olympic Charter sets out the legal framework in which the IOC operates. The Committee is an international, non-governmental, not-for-profit organisation with the status of a legal person and recognised by the Swiss Federal Council. Decisions of the IOC are considered final, with dispute resolution mechanisms including the IOC Executive Board and CAS (IOC, 2007:29).

The Charter further sets out the IOC's rights over the Olympic Games and all Olympic property, such as symbols, flags, motto, anthem, emblems, flame and torches. The overarching principle is as follows (IOC, 2007:21):

> The Olympic Games are the exclusive property of the IOC, which owns all rights and data relating thereto, in particular, and without limitation, all rights relating to their organisation, exploitation, broadcasting, recording, representation, reproduction, access and dissemination in any form and by any means or mechanism whatsoever, whether now existing or developed in the future. The IOC shall determine the conditions of access to and the conditions of any use of data relating to the Olympic Games and to the competitions and sports performances of the Olympic Games.

In bidding for the Games, countries are required to accept that the rules and regulations of the Olympic Movement have precedence over their national laws. The national government of a potential host city must ensure that its regulatory environment provides the necessary legislative flexibility as required by the IOC to enable effective implementation of the Games. Existing legislation needs to be examined and, where necessary, amendments made to streamline and provide a supportive environment in areas such as the following:

- financial guarantees required to host the Olympic Games and the commitment to ensure financial support for Games-related infrastructure
- customs, tax, duties and levies and their implications for hosting the Olympics
- corporate sponsorship, intellectual copyright and marketing associated with the Olympics
- broadcasting rights and the costs thereof
- provision of public health services
- effective issuing of visas and appropriate arrangements for access by international Olympics competitors and officials
- readiness of transport and general public infrastructure
- readiness of sports infrastructure
- safety and security
- environmental frameworks

2.3 Selection criteria in the bidding process

The process for selecting a host city, as outlined in the Olympic Charter, is the IOC Executive Board's primary consideration when deciding which cities should receive candidate status. Similar criteria were used in the selection of host cities for the 2008 and 2012 Summer Olympics. The IOC not only evaluates host cities' compliance with the selection criteria, but also considers the innovative and contextual application of host city requirements to prevailing local and international conditions.

While the formal selection criteria in the Olympic Charter are fundamental, studies of previous Olympic bidding processes bring to light additional factors that may influence decisions. These include the average distance of the sports venues from the Olympic Village, average temperatures during the Games, and high levels of unemployment within the potential host city, as hosting the Games is viewed as a means to address unemployment (Feddersen et al., 2007).

The detailed selection criteria involved in the 2020 bidding process are outlined in Appendix 1, and in summary cover the themes identified below.

Table 1: IOC selection criteria for the 2020 Olympics bidding process

Criteria	Requirements
National government support	• Government to provide resources and implementation support • Government involvement in candidature committees • Legal framework to support hosting of the Games • Commitment to the Olympic Charter • Compliance with the IOC's Code of Ethics • Signatory to the World Anti-Doping Code • Verifiable data to gauge public opinion for hosting the Games
General infrastructure	• High-capacity road and public transport infrastructure • International airport with effective public transport and road networks • High-tech international broadcast centre close to the Olympic Village
Transport system	• Dedicated transport available to all competition venues • Distances and travel times between Olympic venues • Reliability of urban travel times along major traffic routes

Criteria	Requirements
Sports venues	• As few venues as possible to be utilised within IOC guidelines • A rational clustering of venues close to the Olympic Village and Park • Venues to be constructed not to be included in the Games budget • Legacy value of permanent and temporary venues built for the Games • Sports concept to prioritise quality of experience for athletes
Olympic Village	• Suitable location • Legacy value and post-Games use • Travel distance to venues • Quality of accommodation to be provided • Land available for construction and the surrounding environment • Temporary versus permanent structures • Feasible financing arrangements for establishment of the Village
Environmental conditions	• Land use and resource consumption • Environmental initiatives implemented to balance impact of the Games • Environmental legacy
Accommodation	• 39 000 rooms in 3–5 star hotels for Olympic groups and the media • An additional 11 000 rooms for the OCOG and spectators • All accommodation to be within 50 km of the city centre • Provide time and quality guarantees if more accommodation facilities are to be built
Safety and security	• Sufficient personnel deployed for up to 50 days, 24 hours a day • Appropriate anti-terrorism measures • Levels of known recorded crime and public safety issues • Technical and professional competence of security forces • Effective command and control systems for the Games

Criteria	Requirements
Overall project and legacy	• Understanding of Olympic needs • Olympics needs to fit with sports and infrastructure needs of the host city • Overall athlete experience • Post-Olympic legacy
Experience in hosting international sports events	• Demonstrable organisational capacity • Experience of host city in hosting major international events and world championships in Olympic sports in the last ten years • Quality of the events organised, levels of public support and the experience of IFs
Financial plan	• Realistic combination of government funding and private sector revenue • AU$ited accounts to be presented at the end of the bidding process • Detailed and realistic budgets provided in bid documents • Demonstrated feasibility of commercial revenue projections • Detail of government contributions to the financial plan • Provision of medical, security, transport and other services • Provision of competition and non-competition venues • Infrastructural developments • Underwriting of potential OCOG deficit

A priority in any bid to host the Olympic Games is that of a country making an informed decision as to which of its cities will be the applicant city. This is determined, firstly, by which city best meets the IOC's requirements for Olympic host cities; secondly, where expenditure on infrastructure and service delivery associated with the Olympics will best meet the developmental agenda of the state (as the major funder of the event); and, lastly, where the legacy of the Games would have the greatest impact. Local stakeholder groups and interested parties also play an important part in determining the success of an Olympics bid. This is due to the IOC's high regard for the role of citizen participation in the bidding process, as evidenced in the London 2012 Olympics bidding phase.

While IOC regulations allow countries to nominate only one applicant city, they are not precluded from hosting some of the events in other cities. This provision must be included

in all bidding documents and articulated to the IOC, giving a sound business case for the decision to stage events outside of the host city. In the London Olympics, for instance, eight venues outside of the host city will be used – for soccer the City of Coventry Stadium, the Millennium Stadium in Cardiff, Old Trafford in Manchester, Hampden Park in Glasgow and St James' Park in Newcastle; water sports venues at Eton Dorney in Buckinghamshire, Lee Valley White Water Centre in Hertfordshire, Weymouth and Portland in Dorset; and cycling facilities at Hadleigh Farm in Essex. Brands Hatch in Kent, which is 35 km from London, will be the venue for road cycling in the Paralympic Games.

2.4 Institutional arrangements

Countries wishing to host the Olympic Games have to establish different forms of institutional arrangements to meet the requirements of each phase of the planning process. One form of institutional arrangement will be required in the bidding period and, if the bid is successful, another form of institutional arrangement is to be established in the preparatory phase. The key roles and responsibilities of the various bodies involved in organising the Games are outlined below.

2.4.1 The IOC

The IOC plays a leading oversight role in respect of the organisation and hosting of the Olympic Games, and has the following responsibilities:

- It votes on the sporting programme of the Games to be hosted in the next seven years.
- A year before the event is hosted, the IOC sends out formal invitations to each of the NOCs to participate in the Games.
- The IOC Executive Board determines the requirements for the Olympic Village and the quotas for team officials and personnel accommodated in the Village.
- The IOC, through an IOC Coordination Commission, provides financial, intellectual and technical support to the host city and ensures effective coordination between the IOC, OCOG, IFs and NOCs.
- The IOC provides support to athletes from developing nations to train in optimal conditions in order to participate effectively in the Games.
- During the Games, the IOC Medical Commission is charged with implementing the World Anti-Doping Code and all IOC anti-doping regulations. The OCOG is responsible for undertaking anti-doping controls at Olympic venues, and WADA for conducting these controls outside of Olympic venues.
- The IOC also assists in funding the Games.

2.4.2 The national government

The IOC's stipulations for the national government of the host city are as follows:

- As part of the bid submission, the national government of the applicant city is required to submit a legally binding document to the IOC stating that the host government guarantees that the country and its public authorities will comply with and respect the Olympic Charter.
- The government must provide financial guarantees for the infrastructure costs associated with hosting the Olympics.
- It should also oversee and support the bid process.

International experience reveals that the public sector of the host city is also required to ensure:

- Readiness of the sports infrastructure.
- Readiness of public sector infrastructure, including upgrades to general infrastructure and associated public transport.
- Development of the Olympic Village and the international press and media centres.
- Effective safety and security arrangements.
- Mitigation of the environmental impacts of hosting the Games.
- Appropriate oversight capacity to monitor the performance of the public sector agents assigned to lead delivery of the public sector commitments associated with hosting the event.
- Partnerships and organisational structures between all three tiers of government to effect the required logistical and resource support from the public sector (Davis, 2009:39).

2.4.3 The NOC

The NOC is responsible for the following:

- selecting the national host city
- ensuring the support and participation of the national government in planning the bidding process
- together with the host city, participating in the application and candidature process
- establishing a legally constituted OCOG, which reports directly to the IOC Executive Board
- supporting the OCOG and host city in organising and staging the Games

- appointing a *chef de mission* to liaise with the IOC, IFs and OCOG to address practical problems experienced by competitors, officials and other team personnel
- constituting, leading, organising and providing for the practical arrangements of the national teams participating in the Games
- accrediting media for the duration of the Games

2.4.4 The OCOG

The executive body of the OCOG comprises the IOC members in the country, the president and secretary-general of the NOC, at least one member representing the host city, public sector representatives and leading personalities. Once established, the OCOG is required to:

- conduct all activities within the framework of the Olympic Charter; the IOC, NOC and host city agreement; and any other regulations or instructions of the IOC Executive Board
- comply with all commitments made to the IOC during the candidature phase
- establish an Olympic Village for all competitors, team officials and team personnel, as determined by the IOC Executive Board
- cover all expenses for the accommodation and local transportation of competitors, team officials and team personnel in the Olympic Village and any other housing
- organise a cultural events programme for the Games, approved by the IOC Executive Board
- together with the host city, take joint responsibility for all financial commitments related to the organisation and staging of the Games

2.4.5 The host city

The host city of the Summer Olympic Games is responsible for the following:

- Organising the Olympic Games together with the NOC of the host city's country.
- Hosting all sports competitions associated with the Olympics in the host city, unless the IOC Executive Board has authorised the organisation of certain events in other cities, sites or venues in the country.
- Hosting the opening and closing ceremonies in the host city.
- Together with the NOC and OCOG, taking joint responsibility for all commitments related to the organisation and staging of the Games.
- Together with the OCOG, taking joint responsibility for all financial commitments related to the organisation and staging of the Games. Thus the IOC bears no financial responsibility for organising and staging the Olympic Games.

2.4.6 The Olympic Games Coordination Commission

This body includes representatives of the IOC, IFs, NOCs and athletes. It is responsible for improving cooperation, assisting the OCOG, monitoring progress with the organisation of the Games and reviewing the practical arrangements and participation costs of all participants.

2.4.7 International Federations

The 28 IFs set the rules and technical control and eligibility criteria for Olympic competitions and organise qualifying events. During the candidature phase they help to evaluate the technical readiness of cities' venues for the various sports. The IFs work together with the OCOG on the competition schedule for the use of technical facilities and sports equipment during the Games. They also nominate referees, judges and other technical officials, and establish the final results and ranking of each event (IOC, 2010a).

2.4.8 The bidding phase

In the bidding phases for the Olympics the NOC plays a key oversight role and liaises with the IOC and the national governments. It is responsible for inviting cities to bid for host city status, and for electing the national host city. Host cities are expected to develop bids, interact with their national governments, secure the necessary guarantees, submit bids to the NOC and obtain the necessary civil and private sector support. The IOC adjudicates all phases of the bidding process and provides technical support to potential applicant and candidate cities.

2.4.9 The preparatory Games phase

More recent Summer Olympic Games have seen the evolution of various institutional arrangements. These have enabled a higher level of participation by various stakeholder groups, the development of public-private partnerships, and a greater role for the private sector in the organisation and funding of the Games. Generally, a national government department assumes responsibility for the overall coordination of the preparations. A private sector body is established to oversee the hosting and staging of the Games, whereas a public sector body is made responsible for building new venues. Various public sector bodies are organised, with a dedicated responsibility for implementing specific public services.

The London 2012 Olympic Games are being organised by two institutions, one private and one public. The former is the London Organising Committee of the Olympic Games and Paralympic Games (LOCOG), which is responsible for staging and hosting the 2012 Games. The LOCOG receives income from the IOC, from the sales of tickets and merchandise, and from a domestic sponsorship programme.

The Government Olympic Executive in the UK Department for Culture, Media and Sport (DCMS) leads government support and funding for the Games. It reports to the Secretary of State for Culture, Media and Sport based in the Cabinet Office. Public sector support for the Olympics is coordinated through the Olympic Delivery Authority (ODA). It is responsible for delivering new venues and infrastructure for the Games, and for supporting regeneration and legacy initiatives in sport, culture, the environment, education and business.

The ODA is funded by the DCMS, the Greater London Authority, the London Development Agency (LDA) and the Olympic Lottery Distributor. The roles and responsibilities of all parties involved in the London Olympics process are detailed in a joint venture agreement signed by the Secretary of State for Culture, Media and Sport (representing the UK government), the Mayor of London (representing the city of London) and the British Olympic Association (BOA) (IOC, 2005:66).

2.5 Financing

This section outlines the funding processes involved in hosting the Olympic Games. It sets out the cost implications to the public sector, based on this sector's contribution to both the OCOG and non-OCOG budgets.

2.5.1 Revenue sources for hosting the Games

Funding sources for the Olympic Games have evolved since the 1940s, reflecting the level of interest the public has in the Games and their acceptance of public sector support for mega-events. Between the 1940s and 1970s, the Games were funded primarily by the public sector (Preuss, 1998). With the city of Atlanta voting against public sector financing of the Olympics, the private sector has increasingly taken up this responsibility. Since the 1980s, private sector funding has come to incorporate sponsorship, television rights, suppliers and donations. In addition, the IOC contributes to the OCOG budget. In the case of the Rio 2016 Olympics, for example, the IOC's contribution amounts to 20% of the OCOG's budget, or US$582m (Appendix 2).

The public sector, however, continues to play a significant part in providing financial support for the Games. The bulk of its enormous contribution is allocated to those elements of Olympics budgets that are contained in the non-OCOG budget, such as the provision of infrastructure and extensive support services needed in hosting the Games. Recent Olympic events have seen the public sector contribute the following amounts (Table 2) for hosting the Games (Preuss, 2008:42).

Table 2: Costs of the Games in relation to indicators of national accounts

Olympics	Costs (US$ million)	GDP (%)	Government consumption (%)	Private consumption (%)
Atlanta	2 021	0,055	0,026	0,007
Sydney	4 788	0,255	1,32	0,236
Athens	5 000 (est.)	0,054	0,443	0,108
Beijing	36 000 (est.)	0,386	3,19	0,781

Public sector financing of the Olympic Games is generally sourced from a combination of the different spheres of government – local government (linked to the host city), provincial or regional government, and national or federal government, as appropriate. In some instances, as is the case with the 2012 Games, government agencies (such as the LDA and the national lotteries) have played a key role in supporting particular elements of the Olympics bid.

Other sources of revenue are procured in the following areas:

- an IOC contribution (e.g. £1,3bn for the London 2012 Olympics bid)
- sponsorship, both local and international
- ticket sales
- television rights
- support from the national lotteries

The budgeting process for the Olympic Games is very detailed and has to meet the demands of the different bidding phases. Separate budgets are required for direct expenditure on the Games (as detailed in the OCOG budget), as well as for expenditure that is not directly related to the Games, including Games and transport infrastructure (as detailed in the non-OCOG budget). The government is required to provide guarantees for both the OCOG and the non-OCOG budgets.

The IOC's stipulations for financing the Olympic Games (as outlined in the IOC contract) ensure that the IOC benefits from a contractually bound share of the revenues associated with the Games, but is legally absolved of any debts that may arise. These debts accrue directly to the host city and not the host organising committee. It is likely that even if hosting the Olympics is a financial success, some debts will remain – this is because infrastructure investments needed to host the Games are likely to be funded through borrowing.

2.5.2 Funding the bidding phase

The costs associated with each bidding phase are primarily borne by the public sector. Separate budgets are required for the applicant and candidature phases. The costs of the bidding process include the payment of a non-refundable deposit of US$500 000 to the IOC, in addition to the bidding costs. For the 2016 Olympics, for example, the Brazilian government committed US$42m, of which US$7m was for the applicant phase and US$35m for the candidature phase (Rio de Janeiro, 2007:21).

2.5.3 The non-OCOG budget

This budget covers both Games-related and non-Games-related costs. It includes infrastructure expenditure on sport, transport, logistics, ICT and accommodation, which is funded primarily by the public sector and, where appropriate, through financing structured through public-private partnerships.

For the Rio 2016 Olympics, the non-OCOG budget includes funding for Games villages, the international broadcast centre and the international press centre. Infrastructure costs for hosting the Games have been reduced, as Rio is one of the host cities for the 2014 FIFA Soccer World Cup and new infrastructure (such as airports, accommodation, transport, security and football stadiums) has recently been upgraded. In addition, a Federal Congress investment plan, Plan for Growth Acceleration, includes expenditure of US$250bn over four years in major social and infrastructural projects. These will benefit infrastructure spend in support of the Games (Rio de Janeiro, 2007:22).

Public sector funding through the non-OCOG budget (Appendix 3) is extensive and includes the following:

- US$6 324 052 000 for transport infrastructure to upgrade the international airport, roads and railways
- US$1 397 316 000 for environmental management systems
- US$893 041 000 for the power/electricity infrastructure
- US$942 863 000 for security equipment
- US$568 589 000 for competition and training venues
- US$495 299 000 for the Olympic Village
- US$942 189 000 for the Barra Media Village
- US$235 359 000 for the international broadcast centre and main press centre

The full public sector contribution to the hosting of the London 2012 Olympics stands at £9,298bn, or US$15 093 484 315 000 (DCMS, 2010:19).

2.5.4 The OCOG budget

A combination of private and public funding is utilised in the OCOG budget, which covers all direct Games-related expenditure and operational costs. For example, London's OCOG budget was set at US$2,46bn (IOC, 2005:101) and that of Rio de Janeiro at US$2,82bn. The public sector's contribution to the OCOG budget for the latter event stands at US$692 066 000. This figure does not comprise the full public sector contribution to the Rio 2016 Olympics, as the bulk of public sector funding for this event is covered by the non-OCOG budget.

Appendix 2 outlines in full the OCOG budget of the Rio Olympic Games and provides an overview of revenue sources, the intended expenditure on capital investments, and operational expenditure. The Brazilian government (city, state and federal) has provided funding guarantees for the following:

- permanent venues and facilities
- the international broadcasting centres and international press centre
- training venues
- transport and related infrastructure
- the provision of all security, medical customs, immigration and other government-related services at no cost to the OCOG

Caixa Econômica Federal, the federal government-owned Federal Savings Bank of Brazil, is providing guarantees for the Olympic and Paralympic Village and the Barra Media Village.

The specific plans and infrastructure outlays for the host city will determine the exact extent of the public sector's contribution to such an undertaking. Recent international budgeting and expenditure associated with hosting the Olympics give an indication of possible cost implications. It is suggested that if an Olympic event of the magnitude of Rio 2016 and London 2012 is undertaken in 2020, it is likely to cost an approximate ZAR107 845 232 000.

3. Hosting the 2020 Summer Olympics: Potential costs and benefits

Firstly, the economic impacts of hosting the 2020 Summer Olympic Games are considered in this section (Table 3). These include impacts on infrastructure, inward investment and tourism; opportunities for new business; and diversification, such as supply chain

and cluster development opportunities. Secondly, the potential social impacts of hosting the Olympics are dealt with, including skills development, employment opportunities, and sport and cultural legacy benefits. The section concludes with a consideration of likely environmental impacts.

Table 3: Possible costs and benefits associated with hosting the 2020 Olympic Games

		Benefits	Costs/risks
Government	**Tangible**	• Increased tax revenue • Opportunity for job creation • Increased contribution to GDP	• Investment in urban renewal • Investment in sports stadia • Investment in public infrastructure
	Intangible	• Increase in tourism • Increase in foreign direct investment • Raised international profile of the host city and country • Opportunity to utilise sports venues and Olympic-specific venues for long-term projects • Promotion of national pride	• Expenditure on non-infrastructure investment • Possible increase in petty crime • Increased public sector attention to service delivery linked to the Olympics • Possible bribery and corruption in the bidding process • Possible development of public infrastructure with limited post-Games use
Private sector	**Tangible**	• Increased local business opportunities • Increased revenue from spectator spend	• Potential displacement of regular tourism customers
	Intangible	• Increased exposure of product to potential markets (tourism and sports industries) • Improved marketing • Opportunities for public-private partnerships	• Overinvestment in potential business opportunities
Citizens	**Tangible**	• Increased investment in public health facilities • Increased investment in public sport and cultural amenities • Improved public infrastructure • Improved job opportunities	• Potential negative impact for residents living close to sports facilities • Possible increase in property rates
	Intangible	• Benefit from legacy projects • Opportunities for skills enhancement • Opportunities to participate in volunteer initiatives linked with the Games • Impacts of initiatives for city regeneration	• Displacement of possible funding for essential public goods (water, sanitation, housing)

Source: Adapted from DBSA (2009:11).

3.1 Economic benefits

Studies on the economic impacts of the Olympic Games are fraught with controversy. Criticism of the studies undertaken relates to the inflated benefits predicted by commissioned research; the different modelling techniques that are applied (such as input-output tables and models, and computable or general equilibrium modelling); and the fact that ex ante studies are generally undertaken with few ex post facto studies to assess realistic achievements.

Nevertheless, the available literature gives some indication of the positive impacts of previous Olympic Games on national economies. These are primarily due to the increased flow of funds into the national and local economies. Increased funding flows emanate from broadcasters, sponsors, the IOC, NOCs, athletes, officials and tourists (Kasimati, 2003:404). A summary drawn from the literature is presented in Table 4.

Table 4: Economic benefits of hosting the Summer Olympic Games

Summer Olympics	Total economic impact	Impact as a % of GDP	Tourists (m)	New jobs	Period
Beijing 2008	–	1	–	–	2002 – 2008
Athens 2004	US$ 15,5bn	–	5,9m	445 000 (Greece)	1998 – 2004
Sydney 2000	AU$ 6,5bn (1996 prices)	2,78	n/a	90 000 (Australia)	1994 – 2006
Atlanta 1996	US$ 5,1bn (1994 prices)	2,41	1,1m	77 026 (Georgia)	1991 – 1997
Barcelona 1992	US$ 0,03bn	0,03	400 000	296 640 (Spain)	1987 – 1992
Seoul 1998	KRW 1846bn	1,40	n/a	336 000 (South Korea)	1982 – 1988
Los Angeles 1984	US$ 2,3bn (1984 prices)	0,47	600 000	73 375 (South California)	1984

Source: PWC (2004:20).

3.1.1 Increased public investment in infrastructure

A major possible benefit to the host city is that of increased public sector investment in hard infrastructure required for the Games. This could include upgrading public sector infrastructure (e.g. improving road and rail networks) and building new sports infrastructure. This investment will, however, come at a cost to the public sector, unless innovative and creative mechanisms are sought to involve the private sector in the required capital outlays.

As the IOC rules specify that Games revenues must be used to pay for expenses and facilities directly related to the Games, any improvements to the city as such (e.g. public transport, road and rail infrastructure, upgrades of sport infrastructure, and general spatial improvements, such as greening the city) cannot be factored into the Games budget.

The responsibility for ensuring the readiness of public sector infrastructure for the 2020 Olympic Games, including infrastructure upgrades and public transport improvements, rests with the host city's government and comes at a cost to the public sector. This expenditure is incorporated into the non-OCOG budget.

It is for this reason that the Beijing Organising Committee for the Games of the XXIX Olympiad (BOCOG) argued that investments in transportation (US$26,2bn), energy (US$10bn), water resources (US$2,4bn) and the urban environment (US$2,5bn) were part of the Beijing city's budget and were not to be incorporated into the cost of hosting the Olympics. These investments were, nevertheless, a large public sector capital outlay associated with hosting the Olympics. Approximately US$41,1bn was spent on non-sport capital investments for the Beijing Games, including the upgrading of over 320 km of roads, the construction of two additional ring roads, and the addition of subway and light rail lines for Beijing's transport system. A 9 000-room Olympic Village for housing 16 000 athletes was built in Beijing and was to be converted into an apartment complex after the Olympics (Martin, 2008:4).

Infrastructure investments made for the 2004 Athens Olympics have highlighted the need to address maintenance plans with any such investment. Some US$11,2bn of public sector funding was invested in Greece's 2004 Olympic bid, which included enhancements to the airport and metropolitan rail system, a toll road surrounding Athens, and the conversion of roads in the historic centre of Athens into walkways. Much of this infrastructural upgrade, however, has not been sustained. Furthermore, it has met with local community resistance, where protestors against recent austerity measures have directly targeted the Athens Olympic stadium.

For the Barcelona Olympics, joint public sector investments in the city amounted to US$5,390m. These covered city urbanisation, housing upgrades, collective transportation, a ring road, support for cultural institutions, improving sports facilities, investment in the maritime facade, and enhancing beaches and public parks (Brunet, 2010:9).

Public sector investment in infrastructure for upgrading cities in preparation for the Olympics offers a basis for ensuring a lasting economic legacy for the city and economic benefits for all citizens. The 1984 Los Angeles Olympics were staged almost entirely from private sector funding as the city had voted against public sector financing of the Games. This resulted in the commercialisation of the event and the involvement of global companies in sponsorship deals. While the Games were a commercial success, only a small amount was invested in upgrading the city's infrastructure, thereby limiting the possible long-term economic benefits that may have accrued to the city (PWC, 2004:20).

The IOC's requirements for public transport and infrastructure include ready access to an international airport, appropriate associated nodal linkages, and an effective transport strategy to ensure that safe, effective and reliable modes of transport are available to all competitors and visitors. In particular, dedicated transport is required for Games participants and officials, and the average time taken to reach venues is a key consideration.

For the London 2012 Olympics, a transport plan focusing on ensuring effective public transport through an extensive route network is being implemented by a dedicated Olympic transport authority. The cost of enhancing the infrastructure is an approximate US$30bn, including US$11,6bn for developing rail transport in East London (where the Games will be staged) and US$600m for infrastructural improvements directly related to the Games (IOC, 2005).

The transport strategy for the Rio 2016 Olympics is premised on major mass transport zones linking four Olympic zones primarily through roads, rail and a Bus Rapid Transit (BRT) system. Infrastructure investment for the Olympics has been streamlined due to existing preparations for hosting the 2014 FIFA Soccer World Cup, and amounts to US$632 052 000. Infrastructure enhancements are effected through the Olympic transport agency and an infrastructure delivery agency (Rio de Janeiro, 2007:37).

By comparison, infrastructure spend associated with a South African bid to host the Summer Olympics (including non-Olympic-dependent and Olympic-dependent costs) could amount to ZAR55 887 789 000.

3.1.2 Greater volumes of inward investment

Studies on the impact of previous Olympics have indicated that preparations for the Games may act as a catalyst for encouraging inward investment, boosting the global profile of the host city and providing a platform for increased investment in additional public and private facilities and infrastructure.

For example, the joint venture company Barcelona Holding Olímpic, S.A. (HOLSA), set up by the Spanish government and Barcelona city, was responsible for encouraging direct and indirect investment in support of the Olympics. Total private and public spending on infrastructure and facilities from 1986 to 1993 amounted to US$8 012 000 000. Investment for the Barcelona Olympics involved road infrastructure (over 78 km of roads), sports facilities, reopening the city to the seafront to accommodate the Olympic Village, offices and business facilities, telecommunications networks, and hotels (Brunet, 2010:7).

3.1.3 Enhanced tourism capacity

Hosting the Olympics offers the opportunity to attract more visitors to the local destination and, potentially, to other parts of the country as well. The host city can be promoted as a more attractive international tourist destination and a more sustained impact on visitor numbers and/or spending can be stimulated.

The influx of Games participants alone provides a basis for increased marketing of the country and the host destination. A projection of possible visitors to the Games can be based on the number of participants in previous Summer Olympics, as seen in Table 5.

Table 5: Tourism benefits of hosting the Summer Olympic Games

Summer Olympics	Tourists	NOC members	Number of athletes	Male athletes	Female athletes	Events	Period
Beijing 2008	–	204	10 500	–	–	302	2002 – 2008
Athens 2004	–	201	10 625	6 296	4 329	301	1998 – 2004
Sydney 2000	n/a	200	10 651	6 582	4 069	300	1994 – 2006
Atlanta 1996	1,1m	197	10 318	6 806	3 512	271	1991 – 1997
Barcelona 1992	400 000	169	9 356	6 652	2 704	257	1987 – 1992
Seoul 1998	n/a	159	8 391	6 197	2 194	237	1982 – 1988
Los Angeles 1984	600 000	140	6 829	5 263	1 566	221	1978 – 1984

Sources: PWC (2004:20) and IOC (2010b).

Inflated projections of the potential tourism spend arising from mega-sporting events should be viewed with caution. For instance, South Africa's recent experience of hosting the 2010 FIFA Soccer World Cup, while extremely positive, did not result in the huge influx of international visitors as predicted in a number of preliminary studies. South African Tourism's analysis of tourism spend around the World Cup revealed that altogether 309 554 foreign tourists arrived in the country for the primary purpose of attending the event. Africa accounted for 32% of the foreign tourists, followed by Europe (24%) and Central and South America (13%). Tourists who came specifically for the World Cup spent ZAR3,64bn in South Africa – primarily on shopping, accommodation, food and drink, with Europeans being the largest spenders. Tourists visited for an average length of 10.3 nights (South African Tourism, 2010).

As regards accommodation, the IOC stipulates that a host city should provide 39 000 rooms in 3–5-star hotels or equivalent for use by Olympic groups, excluding athletes and officials. This includes between 15 000 and 17 000 rooms for the media. An additional 11 000 rooms, including all lower categories of hotel rooms, should be available to the OCOG and spectators. Any existing and planned hotel rooms, media villages and cruise ships are to be situated within a 50 km radius of the city centre.

3.1.4 City regeneration

The hosting of the Olympics provides a potential stimulus for the local economies in which the Olympic Village and sporting infrastructure will be housed. If the Games are located in historically underdeveloped areas that lack social, economic, public and sports

infrastructure, they may provide an added incentive for extensive economic regeneration of the local community.

For the Barcelona Olympics, the NOC adopted a strategic approach to the regeneration of the city (Brunet, 2010:11). This comprised concentrating certain Olympic activities within particular sections of the city, thereby involving the entire city in the regeneration effort. This further ensured that, through utilising many sub-sites, decentralised regeneration of the region could be achieved. The city was thus divided into the following areas of concentration for the purpose of the Games:

- South West Montjuïc: Olympic Stadium and primary sports facilities, including swimming
- South East El Poblenou: Olympic Village and the Port
- North West Diagonal Area: sport facilities and hotels
- North East La Vall d'Hebron Area: sport facilities and hotels

Key anchor infrastructural developments that may support the regeneration of local cities include the development of the Olympic Village, the international broadcast centre and the international press centre. The establishment of an Olympic Village is a fundamental prerequisite, as it is used to accommodate all athletes, NOC officials and related Olympic personnel. The IOC requires that the Olympic Village be established in close proximity to the Olympic stadium, with effective transport arrangements ensuring ease of movement for competitors, officials and administrators. The accommodation provided must comply with the IOC's technical requirements; prioritise the needs of Games participants; and include environmentally sustainable design principles. The Olympic Village is generally developed on the basis of a public–private partnership arrangement. An IOC requirement is that the development planning processes for the village should take lasting legacy considerations into account.

The London 2012 Olympics will be staged in the Lower Lea Valley and extensive public sector resources are being used to revitalise and regenerate this depressed area of the city. This includes the upgrading and extension of public infrastructure, predominantly rail networks. The Olympic Village comprises an area of 30 hectares in the Lower Lea Valley of East London, with apartment buildings providing accommodation for approximately 17 000 Olympic participants. After the Games the buildings will be transformed into 2 800 new homes, including 1 379 affordable homes.[1] The village is being developed on the basis of a public-private partnership, with the LDA playing a key role in ensuring that the land required to develop the site is released.

1 http://www.london2012.com/athletes-village

The Rio 2016 Olympic Village will consist of an apartment complex housing up to 17 500 residents. It will be established in the Barra district, in close proximity to the Rio Olympic Park, which will enable 50% of the athletes to be accommodated within 5–10 minutes of competition venues. The apartments will be converted into residential accommodation after the Games. The financing of the village will be undertaken on the basis of a public-private partnership involving development concessions from the government, government-backed buyer financing, and private investment (Rio de Janeiro, 2007:31).

The international press centre and international broadcasting centres are vital hubs required for maximising international television and press coverage of the event. Access to reliable high-speed ICT networks and connectivity are key requisites for the establishment of these facilities. For the Rio 2016 Games, the facilities will be housed in a newly constructed commercial complex in the centre of the Rio Olympic Park. Joint facilities and shared services are to be provided within the complex. After the Games the site will be developed as a mixed-use development comprising office, retail, cultural and institutional facilities. The facilities are also being developed on the basis of a public-private partnership.

3.1.5 New business development supply chain and cluster opportunities

While the Games provide a basis for the development of new business, this is most likely to occur in particular economic sectors linked to opportunities arising from the development of infrastructure and services for the event. As with the FIFA Soccer World Cup, the hosting of the 2020 Olympics does not provide the basis for a general and sustained broad economic rejuvenation of an entire society. Sectors likely to benefit from the hosting of the Games include:

- the construction industry (particularly for the development of sport and public infrastructure)
- new business service industries (including business services related to the sports tourism and conference industry)
- tourism and catering industries (particularly niche tourism over a six-year period, first hosting the officials and key administrators involved in preparations for the Games and then on a mass basis over the period of the Games)
- sports management and facilitation

The greatest economic impact, however, is likely to be in the period leading up to the Games, as the two-week period of the actual event is insufficient to sustain new businesses in the medium to long term. In order to maximise local benefits that accrue as a result of the Games, particular measures need to be put into place. These may relate to procurement regulations favouring local companies and employees; sustained and ongoing operations

and maintenance contracts to maintain infrastructure in the post-Games period; and other measures as provided by public and private business support organisations.

3.2 Social benefits

This section considers the possible benefits to citizens arising from skills development and employment opportunities, and the impacts of a lasting sporting and cultural legacy.

3.2.1 Job creation

A comparison of the performance of recent Olympic Games provides a basis for ascertaining the job creation potential of the event (Table 6).

Table 6: Summary of expected impacts of Summer Olympics on employment

Spatial level	Pre-event	During the event	Legacy	Post-event
United Kingdom	2 955	3 261	1 948	8 164
London	25 824	3 724	9 327	38 875
North East London (Olympic area)	7 344	311	311	7 966
China	600 000	–	–	–
Spain	296 640	–	–	20 230
Barcelona	41 450	–	–	–

Sources: Blake (2005); Brunet (2010:9); PWC (2004:20); http://en.beijing2008.cn/news/official/preparation/n214180398.shtml

Job creation occurs primarily in the period leading up to the Games. Increased local economic opportunities may also improve social cohesion within the local community and enable skills transfer. Hosting the Games is likely to stimulate job creation in the following sectors:

- Construction: Construction of the Olympic Village, Olympic Sports Park and new sports infrastructure; upgrading of existing sports infrastructure; improvements to public roads infrastructure.
- Services industry: Increased capacity required for the influx of tourists in the hotel and catering industry.
- Public sector: Increased programme management and coordination capacity required to render service delivery of infrastructure and public services in support of the Games.
- Public transport services: Increased capacity to operate additional public transport services.
- Security services: Increased capacity within both the public sector (the police) and the private sector to provide effective policing and security services to IOC standards.

Many of the employment opportunities identified above relate to low-skilled and temporary employment.

3.2.2 Opportunities for skills enhancement

The construction and development programme associated with hosting the Olympics allows measures to be put in place to provide effective upskilling of targeted groups. For the London 2012 Olympics, for instance, various skills programmes have been put into effect. The London 2012 Apprenticeships Initiative offers 350 apprenticeship opportunities to people who want to work in the construction industry and gain a formal qualification while doing so. An additional apprenticeship programme, the Advanced Apprenticeship in Creative and Digital Media, is provided for the media industry.

3.2.3 Increased investment in public health, sporting and cultural amenities

Lasting legacy benefits can be achieved through increased investment in public sector amenities, such as public health services, cultural and sports facilities and other public amenities. Investments in public infrastructure (road, rail and airport upgrades) to improve connectivity for the Olympics can serve as a basis for enhancing associated economic infrastructure in support of key growth sectors. Hosting the Games provides the host city and the country with the opportunity to further develop the built infrastructure and cultural and sporting environments.

A key requirement of the Olympics is to ensure appropriate legacy effects, and this should be understood as a prerequisite for all interventions undertaken in support of hosting the event. Thus, for example, post-Games legacy requirements should be considered from the outset when planning for safety and security interventions, public transport infrastructure, the construction of sports and public buildings, and city regeneration investments in support of the Olympics.

For the London 2012 Olympics, the long-term regeneration plan for the Lower Lea Valley includes the transformation of the Olympic Park into a large urban park linking the Thames Estuary with the Hertfordshire countryside, as well as the restoration of the natural floodplains of the River Lea. The park will include riverside housing, shops, restaurants and cafés. The Olympic Village is to be converted into housing, and more homes will be built on the site of the Olympic Park after the Games. The Olympic sports facilities will be adapted for use by sports clubs, the local community and elite athletes. Transport improvements serving the park include an extension to the Docklands Light Railway, increased capacity on the Jubilee Line and the upgrade of Stratford Regional Station.

The Olympics also provide a basis for increasing citizen participation in sport through the inspirational value of hosting the Games and the upsurge in interest in the event. Athletes' performances can be enhanced through focused programmes designed to improve their competency in key identified sporting codes. The quality and standard of sport infrastructure, particularly in underprivileged areas, can be improved. Games organisers

have come to recognise that specific interventions need to be implemented to ensure that the event leaves a lasting legacy for the local population of the host city and on the economy. In preparation for the London Olympics, for example, the ODA is implementing legacy initiatives for target beneficiary groups, such as programmes to encourage participation in community and grassroots sports, and to improve community facilities, skills training and business support programmes. The DCMS funds programmes designed to support Olympic and Paralympic athletes' participation in the Games.

The IOC specifies that 31 sporting stadia and an extensive array of additional training facilities should be made available for hosting the various events of the Summer Olympic Games. The stadia have to meet the infrastructural and operational specifications of the sporting codes, as governed by the IFs and the IOC's sporting and spectator seating requirements. The sporting infrastructure requirements for the Olympics are detailed in Appendix 4.

Where a host city does not have the capacity to stage a particular sport, or an existing facility needs to be upgraded for this purpose, IOC regulations stipulate that this cost cannot be covered by the OCOG budget. The cost of upgrading existing stadia to meet IOC requirements, or to create new stadia and sports facilities, falls within the non-OCOG budget and is therefore generally covered by the public sector or possibly through a public-private partnership. Such partnerships are generally formed where there is a business case for utilising the sports facilities on a commercial basis, or converting these for commercial use after the Games.

IOC regulations require that new permanent sports facilities that are constructed should have a clear post-Games use – not necessarily for sports, but even to serve community or commercial needs. To discourage the building of "white elephants" the IOC requires that post-Games sustainability plans be identified in candidates' bid documents.[2] The IOC does allow for the use of temporary facilities for staging particular events, or to augment capacity within existing facilities. This option is particularly attractive for sporting codes that do not have a large following within the host country, or where post-Games use of the intended Olympic sports facilities is not evident.

The "doubling up" of venues for use by a number of different sporting codes is also allowed. Venues with maximum spectator capacity can therefore be utilised for more popular sports, while lower-level matches are located at venues with a lower seating capacity. For the London Olympics, for example, the ExCel venue will cater for a range of sports, including boxing, fencing, judo, table tennis, taekwondo, weightlifting and wrestling, as well as Paralympic table tennis, judo, power lifting, seated volleyball and wheelchair fencing.[3]

For the London Olympic Games, an innovative package of existing, temporary and new permanent facilities has been planned. The three main clusters of competition venues are the

2 Interview with Mr Sam Ramsamy, London 2012 Olympic Committee.
3 http://www.london2012.com/games/paralympic/paralympic-table-tennis.php

Olympic Park, the Central Cluster and the River Cluster. In all, there are 33 competition venues, of which 15 are existing venues and with only two requiring upgrades. Nine new venues, including the Olympic Stadium, are to be constructed, while nine temporary venues will be used (IOC, 2005:70). The capital cost of upgrading the sports infrastructure is GBP1,182m (DCMS, 2010). Sporting codes will be given the opportunity to own and maintain some of the facilities after the Games and can contribute to this end during the run-up to the event.

The Rio 2016 Olympic Games are being staged at 34 venues, of which 19 are existing sports facilities. Many of the facilities were built or renovated for the 2007 Pan American Games and the upcoming 2014 FIFA Soccer World Cup. Seven new permanent venues are to be constructed, which will be used as an indoor-outdoor national Olympic training centre for 20 types of Olympic sports after the Games. Four additional temporary venues (for volleyball, triathlon, aquatics, cycling and athletics) are to be built, as well as four additional permanent venues. After the Games, the permanent venues will be used as a national tennis centre and an adventure sports park for the youth of Rio (Rio de Janeiro, 2007:27). The cost of capital investment in sporting infrastructure, as outlined in the non-OCOG budget, is US$555 889 000 (2016 prices) and for training venues it is US$12 700 000 (Appendix 3).

Based on the infrastructure investments undertaken for the London and Brazil Olympic Games, South Africa's public sector would have had to invest ZAR5 024 800 000 in sports infrastructure to meet the IOC standards for the 2020 Olympics.

3.3 Environmental costs and benefits

As hosting the Olympic Games is likely to have a negative effect on local environments, the IOC requires that mitigation measures be put into place. If creative measures are adopted, these may leave a lasting legacy for local communities.

The London 2012 Olympics is being marketed as the "greenest" Olympics to date. The key environmental element of the Olympic programme is the development of the Olympic Park, enabling the establishment of an urban parkland incorporating the restoration of wetland and waterways. In addition, creative strategies are being adopted for energy and waste utilisation in the Olympic Village.[4]

Furthermore, a holistic approach is being implemented based on the London 2012 Sustainability Plan, "Towards One Planet 2012", which proposes hosting sustainable Games in compliance with the British Standard for Sustainable Event Management (BS 8901).[5] This approach requires the following:

- All events leading up to the Games should be as sustainable as possible.

4 http://www.london2012.com/
5 http://www.london2012.com/

- The use of venues should be determined by Olympic requirements and, where possible, existing venues should be used.
- New permanent structures should be built only where there is a long-term use for them after the Games.
- For all other Games-related infrastructure, temporary structures should be built.
- To ensure that all spectators get to the Games by means of public transport, or by walking or cycling, existing transport links should be improved and new links developed; this would also improve transport options for the residents of East London after the Games.
- Greenhouse gas emissions should be minimised and legacy facilities should be able to cope with the impacts of climate change.
- To minimise waste, no waste should be sent to landfills during the Games and new waste processing infrastructure should be developed in East London.
- The impact of the Games on wildlife and their habitats in and around venues should be minimised and a legacy of enhanced habitats should be left through investment in the Olympic Park.
- Access for all should be promoted and the diversity of London and the United Kingdom celebrated, while creating new employment, training and business opportunities.
- People across the country should be inspired to take up sport and develop active, healthy and sustainable lifestyles.

4. High-level indicative public sector commitment to hosting the 2020 Summer Olympics in South Africa

This section presents a high-level costing of likely areas that the public sector may be required to fund if the Olympic Games were to be hosted in a South African city. These costs should, however, be viewed with caution and be read as indicative costs only. They are based on the costing of the Rio de Janeiro candidature bid, taking into account 6% inflation per annum for the period 2016 to 2020. It is likely that considerable cost savings could be effected if an AU$it of existing infrastructure capacity in an applicant city is undertaken, and an effective operational plan is put into place based on the optimum and creative use of such infrastructure.

For any bid to be successful, it has to take into consideration the IOC's requirements for hosting the event, the IFs' requirements for sporting infrastructure, and the long-term developmental interests of the country. In all, it remains an extremely costly undertaking. When reading the budget figures for a feasible South African bid to host the 2020 Olympics, the following considerations should be borne in mind:

- The exchange rate: Budget calculations were based on an exchange rate of US$1 = ZAR7. Obviously, a strong rand will have a positive effect on the budget and a weaker rand a negative impact.

- Inflation: The budget figures were calculated at an inflation rate of 6% for the period 2016–20. An inflation rate of either 4 or 8% would have a dramatic impact on the figures.
- Choice of applicant city: This factor is fundamental to the final budget calculations, as it determines the nature and cost of investment required for all purpose-built infrastructure, such as the sporting and competition venues, public infrastructure (road, rail and airports), the Olympic Village and media facilities. An approach that maximises the use of available infrastructure and facilities, such as those built for the 2010 FIFA Soccer World Cup, may result in real budget savings.

Table 7: Public sector costs associated with bidding for the 2020 Olympics at 2020 prices

	Costs are dependent on	Games dependent	Cost (ZAR)
Bidding process	–	Yes	371 168 000
Public infrastructure (airports, roads and railways)	Existing infrastructure backlogs and long-term economic needs in addition to Olympic requirements	No – to include Games needs	55 887 789 000
Sports venues for competition and training	Which applicant city is selected, what existing infrastructure may be used, and whether temporary or permanent structures are erected	Yes – temporary venues No – permanent venues	5 024 800 000
Olympic village	Available infrastructure in the applicant city and existing infrastructure and resources	Yes	4 377 125 000
Media village	Available infrastructure in the applicant city and existing infrastructure and resources	Yes	8 326 443 000
Power and electricity infrastructure	Increased level of investment needed	Yes	7 892 105 000
Environmental management systems	–	–	12 348 554 000
Medical services	Levels of upgrading of public sector facilities required	No	102 495 000
Security	Capital equipment shortages and backlogs	Yes	2 328 040 000
International broadcast centre and press centre	Existing facilities and the extent of ICT upgrades required	Yes	2 079 947 000
Urban legacy	The extent of urban revitalisation required	No	8 406 686 000
Operational support, including the public sector's contribution to the OCOG budget	Levels of private sector support that may be generated and particular services provided by public sector departments	Yes to both	5 724 880 000
Total			**107 845 232 000**

5. Conclusion

Hosting the Summer Olympic Games requires extensive financial and institutional support from the public sector, much of which is not formally acknowledged, as it falls outside of the NOC's budget and is reflected in the non-organising committee budget. The commitment of extensive public funds to support the hosting of mega-sporting events thus requires careful consideration of the long-term benefits for the city and nation.

Cities such as Barcelona have shown that extensive benefits can be accrued through hosting the Olympic Games – benefits with the capacity to enable long-term economic development of the city and which may therefore justify such levels of public investment. In the case of Barcelona, consolidation of public sector investment in regenerating the city for the Games was made possible through partnerships established between the public and private sectors. It also profited from Barcelona's geographical location, as the city was able to maximise its position as a regional tourism and business destination after the Games.

Hosting the Games requires that cities commit extensive public funds to infrastructure upgrades in order to comply with the specifications of the IOC and IFs. Cities such as Beijing have been required to commit to upgrades of transport, rail and associated infrastructure. The challenge for public sector decision makers is to ensure that such upgrades are in keeping with the medium and long-term developmental vision of the cities; that they are financially sustainable and are supported by long-term operations and maintenance plans for their upkeep.

In the light of the changed economic circumstances due to the international recession, governments wishing to support international mega-sporting events may be better placed to resist the demands of international sporting bodies to meet ever expanding infrastructural requirements. Consideration should be given to hosting mega-sporting events in such a way that they make better use of available resources, particularly the resources that are available in developing countries.

References

Blake, A, 2005. The economic impact of the London 2012 Olympics. Discussion Paper 2005/5. Christel DeHaan Tourism and Travel Research Institute, Nottingham University Business School. http://utsescholarship.lib.uts.edu.au/dspace/bitstream/handle/2100/994/Impact%202005_5.pdf?sequence=1

Brunet, F, 2010. An economic overview of the sport, social, urban and environmental impacts and legacies of the Olympic Games. Faculty of Economics and Centre for Olympic Studies, Universitat Autònoma de Barcelona.

Davis, G, 2009. Managing the alchemy of the 2010 FIFA World Cup. In: Pillay, U, Tomlinson R & Bass, O (Eds), Development and dreams: The urban legacy of the 2010 Football World Cup. HSRC Press, Pretoria.

DBSA (Development Bank of Southern Africa) and the (SACN) South African Cities Network, 2009. A framework to assess the impact and legacy of the 2010 FIFA World Cup on the development of South African cities. DBSA, Midrand.

DCMS (Department of Culture, Media and Sport), 2010. London 2012 Olympic and Paralympic Games, 2010. Quarterly Economic Report November 2010. DCMS, London, http://www.culture.gov.uk/publications/7535.aspx

Feddersen, A, Maennig, W & Zimmermann, P, 2007. How to win the Olympic Games: The empirics of key success factors of Olympic bids. International Association of Sports Economists, Working Paper Series, Paper No. 07-05, University of Hamburg.

IOC (International Olympic Committee), 2005. Report of the IOC Evaluation Commission for the Games of the XXX Olympiad in 2012. IOC, Lausanne.

IOC (International Olympic Committee), 2007. Olympic Charter – in force as from 7 July 2007. IOC, Lausanne.

IOC (International Olympic Committee), 2010a. Roles and responsibilities during the Olympic Games. Update January 2010. IOC, Lausanne.

IOC (International Olympic Committee), 2010b. The Olympic Summer Games Factsheet, Update 1 January 2010. IOC, Lausanne.

Kasimati, E, 2003. Economic aspects and the Summer Olympics: A review of related research. International Journal of Tourism Research, 5(6), 433–44. Wiley Online Library, doi: 10.1002/jtr.449.

Martin, MF, 2008. China's economy and the Beijing Olympics. Congressional Research Service (CRS) Report for Congress. Analyst in Asian Trade and Finance, Foreign Affairs, Defence and Trade Division, 6 August.

Preuss, H, 1998. Problematizing the arguments of the opponents of Olympic Games. Faculty of Sports, Johannes Gutenberg University, Mainz, Germany.

Preuss, H, 2008. Signalling growth: China's major benefit from staging the Olympics in Beijing 2008. Harvard Asia Pacific Review, 9(1), 41–5.

PricewaterhouseCoopers (PWC), 2004. The economic impact of the Olympic Games. European Economic Outlook, June 2004.

Rio de Janeiro, 2007. Rio 2016 Applicant City: Candidature acceptance application for Rio de Janeiro to host the 2016 Summer Olympic and Paralympic Games. Submitted to the IOC on 13 September 2007.

South African Tourism, 2010. Impact of 2010 FIFA World Cup, 6 December. http://www.tourism.gov.za:8001/PublicDocuments/2010_12_06/World_Cup_Impact_Study_v8_report_03122010.pdf

Appendix 1: IOC selection criteria

Selection criteria, sub-criteria and criteria weightings utilised to select candidate cities for the 2008 and 2012 Summer Olympic Games

Criteria	Requirements	Weight	Sub-criteria	Weight
Government support, legal issues and public opinion	• Government letters of commitment to the IOC • Government involvement in candidature committees • Government's capacity to implement adequate laws for holding the Games • Commitment to the Olympic Charter • Compliance with the IOC's Code of Ethics • Signatory to the Copenhagen Declaration on the World Anti-Doping Code, and annual payment to the World Anti-Doping Agency • Research study data used to gauge public opinion	2	• Government support and commitment	70%
			• Legal issues and compliance with the Olympic Charter	15%
			• Public opinion	15%
General infrastructure	• High-capacity road and public transport infrastructures • Airport and international broadcast centre	5	• Transport infrastructure (existing 60%; planned 40%)	85%
			• International airport and links to public transport and road networks	5%
			• International broadcast centre, including location and post-Games use	10%
Sports venues	Location – travel distances to venues	4	• Use and adequacy of existing venues, including planned upgrades	35%
			• Venues under construction or in planning, irrespective of their application during the Games – the costs should not be included in the Games budget • Number of venues built for the Games and use of temporary venues with no identified legacy • Feasibility of completing them on time to Games and legacy quality standards	35%
			• Sports concept to prioritise quality of experience for athletes • Utilising as few venues as possible, with rational clustering of venues in close proximity to the Olympic Village and Olympic Park cluster • Legacy value of new venues – no "white elephants"	30%

Criteria	Requirements	Weight	Sub-criteria	Weight
Olympic Village	Location, concept, legacy and likelihood of completing proposed projects	4	• Travel distance to venues	50%
			• Number of villages and accommodation • High-rise versus low-rise • Area of land available • Surrounding environment • Temporary versus permanent	30%
			• Post-Games use and financing arrangements	20%
Environmental conditions and impact	• Current environmental conditions • Consequences of land use • Resource consumption • New construction and infrastructure, versus the utility of new development for the city's needs • Positive environmental initiatives and mitigation efforts	2	• Current environmental conditions and meteorological information as provided by applicant cities	40%
			• Environmental impact of the Games on the host city • Relevant projects implemented to improve environmental conditions or to balance the expected negative impact of the Games • Leaving a positive environmental legacy for the city	60%
Accommodation	• 39 000 rooms in 3–5-star hotels or equivalent for use of Olympic groups (excluding athletes and officials); this includes between 15 000 and 17 000 rooms for the media • An additional 11 000 rooms, including all lower categories of hotel rooms, for the OCOG and for spectators • Existing and planned hotel rooms, media villages and cruise ships to be within a 50 km radius of the city centre • Feasibility of planned hotel rooms, media villages and/or cruise ships	5		
Transport concept	Proposed operational performance of the transport system during the Games	3	• Distances and average travel times by bus between key Olympic competition and non-competition venues • Reliable urban travel times along major traffic routes	50%
			• Coherence of proposed traffic and transport organisation, management and concept against the time-mobility requirements of the Games	50%
Overall project and legacy	• Understanding of Olympic needs • How Olympic needs fit into the general and sports infrastructure of the city and region • Overall athlete experience • Post-Olympic legacy	3		

Criteria	Requirements	Weight	Sub-criteria	Weight
Experience from past sports events	Experience from past sports events and organisational capacity	2	• Number of major international events organised – world championships in Olympic sports and multi-sports games in the last ten years	60%
			• Quality of the events – International Federations' experience and public support	40%
Safety and security	• Requisite management arrangements, capabilities and security and emergency services to respond to critical incidents or civil disasters that may threaten safety and security • Sufficient personnel to be deployed for up to 50 days, 24 hours a day	3	• The incidence and likelihood of terrorism	
			• Levels of known recorded crime and public safety issues	
			• Technical and professional competence of security forces • Proposed command and control systems	
			• Existing security and related technology • Proposed improvements to meet security needs of the Games	
			• Complexity of proposed Games security operations and response	
Finance	• Outline of the overall financial plan of the bid and the ability to deliver the necessary financial support to organise the Olympic Games through a realistic combination of government funding and private sector commercial revenue • Applicant and candidate cities to present the IOC with detailed, audited accounts at the end of the bidding process • Applicant and candidate cities to provide details of their budgets in their bid documents	3	• Government contributions and financing plan and support for: • Provision of medical, security, transport and other services • Provision of competition and non-competition venues • Infrastructural developments • Underwriting of potential OCOG deficit	
			• Feasibility of the commercial revenue projection	

Appendix 2: OCOG budget of the Rio 2016 Olympic Games

OCOG budget of the Olympic Games

	Revenue	US$m	%		Expenditure	US$m	%
1	IOC contribution	675 000	21	A	**Capital investments**		
				13	• Sports facilities	–	–
2	Top sponsorship	335 000	10	B	• Olympic Village	–	–
					• Main press centre and international broadcasting centre	–	–
3	Local sponsorship	313 144	10		• Other	–	–
3	Official suppliers	281 830	9		**Operations**		
				14	• Competition and training venues	368 252	11
4	Ticket sales	418 478	13	14	• Olympic Village	327 643	10
					• Main press centre	24 650	1
5	Licensing	52 191	2		• International broadcasting centre	26 162	1
	• Licensing merchandise	52 191	2		• Other non-competitive venues	47 738	1
	• Olympic Coins Programme	–	–	15	• Games workforce	396 600	12
	• Philately	–	–	16	• Information systems	330 406	10
				16	• Telecommunications and technologies	206 450	6
6	Lotteries	–	–	16	• Internet	29 473	1
				17	• Ceremonies and programmes	144 974	4
7	Donations	34 794	1		• Opening ceremony	63 789	2
					• Closing ceremony	23 196	1
8	Disposal of assets	38 022	1		• Medal ceremonies	5 799	–
					• Cultural programme	23 196	1
9	Subsidies	802 654	25		• Torch relay	23 196	1
	• Federal government	267 551	8		• Other programmes	5 799	–
	• State government	267 551	8	18	• Medical services	23 296	1
	• City government	267 551	8	19	• Catering	88 245	3
				20	• Transport	191 142	6
				21	• Security	27 076	1
				22	• Paralympic Games	197 238	6
				23	• Advertising and promotion	164 095	5
				24	• Administration	196 508	6
				25	• Pre-Olympic events and coordination	51 672	2
10	Others	313 882	10	26	• Other	423 376	13
11	Shortfall	–			Surplus		
	TOTAL	**3 264 996**	**100**		**TOTAL**	**3 264 996**	**100**

Source: Rio de Janeiro (2007:8).

Appendix 3: Non-OCOG budget of the Rio 2016 Olympic Games

Brazilian non-OCOG budget

	US$ (2008)		US$ (2016)	
	Games incremental costs	Total costs	Games incremental costs	Total costs
1. Capital investments				
Airport, ports	–	1 001 250	–	1 161 244
Roads and railways	1 070 643	4 451 487	1 241 725	5 162 808
Accommodation	55 813	55 813	64 731	64 731
Sports venues	–	–	–	–
Competition venues • Training venues • Olympic Village	242 950 10 950 –	479 300 10 950 427 058	281 772 12 700 –	555 889 12 700 495 299
Barra Media Village	–	812 376	–	942 189
Power/electricity infrastructure	–	770 000	–	893 041
Environmental management systems	445 014	1 204 797	516 125	1 397 316
Medical	10 000	10 000	11 598	11 598
Security	365 831	812 958	424 288	942863
Telecommunications network and infrastructure	–	–	–	–
International broadcasting centre and international press centre	202 932	202 932	235 359	235 359
Urban legacy	727 356	820 206	843 583	951 269
Sub-total capital investments	3 131 488	11 059 125	3 631 881	12 826 306
2. Operations				
Security	437 347	437 347	507 232	507 232
Transport	–	–	–	–
Medical	–	–	–	–
Environmental management systems	–	–	–	–
Cultural programme	22 606	22 606	26 218	26 218
City refurbishment	12 000	12 000	13 918	13 918
Special projects	86 600	86 600	100 438	100 438
Sub-total operations	558 553	558 553	647 806	647 806
Total	**3 690 041**	**11 617 678**	**4 279 687**	**13 474 112**

Appendix 4: IOC requirements for the number of sports venues

Sport/discipline	IOC standard		No. of venues	Possible venue sharing	International Federation
Archery		4 000	1		International Archery Federation (FITA)
Athletics/ceremonies		60 000	1	To share with football	International Association of Athletics Federations (IAAF)
Badminton	Indoor venue required	5 000	1	To share with rhythmic gymnastics	International Badminton Federation (IBF)
Baseball		8 000	1	To share with modern pentathlon ride/run	
Basketball	Preliminaries	8 000	1		International Basketball Federation (FIBA)
	Finals	12 000			
Boxing	Indoor venue required	6 000	1		International Boxing Federation (AIBA)
Canoe kayak flatwater		10 000	1	To share with rowing	International Canoe Federation (ICF)
Canoe kayak slalom		8 000	1		
Cycling track	Road and indoor venues required	5 000	1		International Cycling Union (UCI)
Cycling mountain bike		2 000	1		
Cycling road		1 000	–		
Equestrian	Jumping/dressage cannot be held in a city that has had horse sickness in the last ten years	12 000	1		International Equestrian Federation (FEI)
	Cross-country	0			
Fencing	Indoor venues required	2 000	1	Preliminaries	International Fencing Federation (FIE)
		4 000	–	Finals	
Football	Preliminaries	20 000	4	To share with athletics	International Federation of Football Associations (FIFA)
	Finals	50 000			
Golf			–		International Golf Federation (IGF)
Gymnastics artistic		12 000	1	Artistic and trampoline gymnastics to share venues	International Gymnastics Federation (FIG)
Gymnastics trampoline	In either artistic or rhythmic venue	5 000	–		
Gymnastics rhythmic		5 000	–	To share with badminton	
Handball	In either indoor or outdoor facilities	5 000	1	Preliminaries	International Handball Federation (IHF)
		8 000		Finals	
Hockey	Field 1	8 000	1		International Hockey Federation (FIH)
	Field 2	5 000			

Sport/discipline	IOC standard		No. of venues	Possible venue sharing	International Federation
Judo	Indoor facility required	6 000	1	To share with wrestling	International Judo Federation (IJF)
Fencing	Indoor facility required	3 000	–	To share with badminton and rhythmic gymnastics	
Modern pentathlon ride/run	Indoor and outdoor facilities required	10 000	–	To share with baseball	International Union of Modern Pentathlon (UIPM)
Rowing		10 000	–	To share with canoe kayak flatwater	
Rugby			–		International Rugby Board (IRB)
Sailing		–	1		International Sailing Federation (ISAF)
Shooting		3 000	1		International Shooting Sports Federation (ISSF)
Softball		8 000	1		
Swimming		12 000	1	To share with synchronised swimming	International Swimming Federation (FINA)
Synchronised swimming		5 000	–	To share with swimming	
Diving		5 000	–	To share with swimming and synchronised swimming	
Water polo		5 000	1		
Table tennis	Indoor venue required	5 000	1	To share with taekwondo	International Table Tennis Federation (ITTF)
Taekwondo	Indoor venue required	5 000	–	To share with table tennis	World Taekwondo Federation (WTF)
Tennis centre court		10 000	–		International Tennis Federation (ITF)
		5 000	1	Court 1	
		3 000		Court 2	
Triathlon	Outdoor facilities required	2 000	1		International Triathlon Union (ITU)
Volleyball indoor	Either indoor or outdoor facilities	12 000	1		International Volleyball Federation (FIVB)
Volleyball beach		12 000	1		
Weight lifting	Indoor venue required	5 000	1		International Federation of Associated Wrestling Styles (FILA)
Wrestling	Indoor venue required	6 000	–	To share with judo	
TOTAL:			**31**		