Economic Impacts of Olympic Games

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For Discussion

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The views expressed are based on published literature and do not represent the views of Locate in Kent.

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Summary

- More than fifty articles have been reviewed about the benefits of Olympic Games, focusing on post-reviews of impacts, which lead to the conclusion that both short and long-term benefits may accrue from holding the Olympic Games.

- Information from the Beijing, Athens, Sydney, Atlanta and Barcelona Olympic Games has been included. These cities all varied from London in their world status and as business locations at the time of their games, and so impacts on these cities would be expected to vary compared to the impact on London in 2012. For example, whereas the Barcelona games raised the city’s world profile, London already enjoys that status and would not necessarily expect to raise it profile by holding Olympic Games.

- It is generally considered easier to measure the short-term benefits that accrue from international events such as Olympic Games, but more difficult measure the longer-term economic impacts, as these are often more intangible.

- There is much evidence that Olympic Games have an immediate short-term impact on the host city and region in terms of local investment and regeneration. Benefits arise from the level of economic activity around staging the Games, to upgrade sporting, entertainment and general urban infrastructure. This also can lead to additional permanent employment after the games and may lead to longer-term impacts. Major sectors are construction, transport and logistics.

- There are likely to be significant impacts on supply chains and cluster formation within the local and wider regions of Olympic Games.

- Some evidence has been found to suggest that Olympic Games increase Foreign Direct Investment (FDI) (e.g. evidence from Barcelona, Atlanta and Sydney). Some statements suggest a positive effect on longer-term investment in the host city and region, which may be investment that commenced during the preparation phase of the Games. Impacts on regeneration can act as a precursor to further investment by companies as a result of improved infrastructure, communication and emerging business opportunities in the city and region.

- Evidence shows that the Games have a positive impact on perceptions about the host city as a result of the publicity given to the host city and region, which attracts investment. London, which is already a high profile city for inward investment, may benefit from additional publicity that will help it to continue to compete with other European business destinations.

- A ‘ripple effect’ on economic growth has been described, in which infrastructure investments lead to improvements in overall production conditions for domestic and foreign enterprises, making investment more attractive.

- In addition to general perceptions, evidence shows that hosting the Olympic Games enhances the business profile of the host city and acts as a significant catalyst for economic, cultural and social change. This effect is related to the whole process of bidding, preparing and staging the Games, which can continue to have beneficial economic impacts for the host city and region.

- Tourist revenue is significant, and the on-going attraction of Olympic Parks is important.

- Regarding impacts on the regions surrounding Olympic Games host cities, some hard evidence has been found to support this. For Kent, for example, sort-term benefits may accrue from tourist activity. To what extent the location of Stratford in the Thames Gateway will encourage investment in other parts of the Kent Thames Gateway is unknown, but evidence from some Olympic Games suggests benefits do arise in surrounding regions (e.g. New South Wales).
1. Introduction

This review is based on published reports (more than fifty articles reviewed) that discuss the impacts, benefits and legacies of past Olympic Games (Beijing, Athens, Sydney, Atlanta and Barcelona). The review has looked mainly at evaluations made after the games finished, and has not, except in the case of London, considered forecast evaluations of impacts carried out in advance of the Olympic Games.

A thorough internet search was carried out using the key words: Olympics, Olympic, games, benefits, impacts, legacies, key city names, the years and FDI. The literature reviewed and cited in this report is shown as footnotes in the text. It cannot be guaranteed that all relevant literature has been reviewed.

2. Overview of Generic Impacts

Short-term economic impacts fall into four broad categories: direct, indirect, induced and total (sum of direct, indirect and induced) impacts.

- **Direct** impacts arise from the Olympic committee’s spending to purchase goods and services in preparation for and during the games.

- **Indirect** economic impacts are the share of visitors’ spending that purchases goods and services.

- **Induced** economic impacts are the multiplier effects of the direct and indirect impacts, created by re-spending the amounts involved in the direct and indirect impacts \(^1\).

During the run-up to and during the actual event, short-term economic impacts result from revenue brought into the city and region by related sporting and cultural events, the media, pre-Olympic training, marketing activities, athletes, officials, spectators and other visitors. Benefits are largely manifested in earnings and employment created. Although the initial revenue occurs primarily in and around the host city and immediate region, re-spending of revenue has wider benefits.

The Olympic Games have enhanced benefits for sport in the host nation, as a result of the increased investment in sports infrastructure and sponsorship. The investment in the Olympic facilities themselves and the additional infrastructure (particularly accommodation and transport) bring economic benefits in the lead up to the Games. The publicity brought by bidding for, winning and holding the Games also attracts investment.

Longer-term economic impacts include:

- national and international recognition of the host city and state through extensive media exposure
- community benefits including local volunteerism, job creation and training, youth and education programmes, funding for community economic development projects and cultural programmes
- infrastructure and communication benefits
- regeneration impacts
- housing impacts
- new company investment in the city and region
- Increased trade.

Clark \(^2\) provides a similar breakdown of generic benefits as follows:

Primary benefits:

1. Alignment of the event with sector and business growth strategies in the city or nation.
2. Private-public investment partnerships.
3. Image and identity impacts attracting increased population, investment or trade.

\(^1\) The economic impact of hosting the 1996 summer Olympics. Jeffrey M. Humphreys and Michael K. Plummer. Selig Center for Economic Growth, Terry College of Business, University of Georgia.

\(^2\) Local Development Benefits from Staging Global Events – Greg Clark, 2008, OECD
4. Structural expansion of visitor economy and supply chain development and expansion.
5. Environmental impacts, both in built and natural environments.

Secondary benefits:
1. Post event usages of improved land and buildings.
2. Connectivity and infrastructural legacies.
3. Labour market impacts and social/economic inclusion.
4. Secondary impacts in the property market.
5. Global positioning, events strategy going forwards, and project management capability.

The following review enlarges on these categories of benefits and provides examples.

3. Review of Reported Impacts

3.1 Beijing 2008

An appraisal of the impact of the Beijing Olympics presented by Lee Sands \(^3\) considered that, 'the huge inflows of investment to support the Olympics and recreate Beijing have had an important ripple effect on economic growth'. To prepare for the games, China invested nearly $40 billion in infrastructure alone from 2002 to 2006, transformed the cityscape of Beijing. Furthermore, the Olympics have had a significant influence on Beijing's economic development, environment, and the growth of the country's advertising, television, Internet, mobile phone, clean energy, and sports sectors. Development has also impacted on refurbishment of 25 historic areas, including many of the city's landmarks, old streets, and four-corner residences that date from the imperial period; and restoration of Beijing's many historic places, including the Forbidden City.

An analysis by Tobias Birkendorf \(^4\) agreed with this, and considered that economic growth can be attributed to the Beijing Olympic Games primarily by the realisation of necessary infrastructure investments and that investment led to improvements of the overall production conditions for domestic and foreign enterprises, making investment for private enterprises in Beijing more attractive.

Both Sands’ and Birkendorf's evaluations focused on the benefits of the investment in the Olympic Games themselves, and did not point to longer-term economic benefits.

Other studies \(^5\)\(^6\)\(^7\)\(^8\) agree with this conclusion, that the longer-term economic impact of the games on China, and Beijing in particular, is not yet clear. Some sectors of the economy may have benefited from the influx of tourists, but other sectors, such as manufacturing, lost revenue due to plant closings related to the government's efforts to improve air quality. Many evaluations of the benefits of the Olympics are pessimistic, and it is generally expected by economists that there will be no lasting effects on the city's economy as a result of the games.

3.2 Athens 2004

Preparations to stage the Athens Olympics were estimated in 2004 to be $11.2 billion and led to a number of positive developments for the city's infrastructure (airport, metro system, the metropolitan tram (light rail) system, a new toll motorway encircling the city, and the conversion of streets into pedestrianised walkways in the historic center of Athens) \(^9\). This infrastructure is still in use, and there have been continued expansions and proposals to expand Athens' metro, tram, suburban rail and motorway network, the airport, as well as further plans to pedestrianise more thoroughfares in the historic center of Athens.

\(^6\) 2008 Summer Olympics. Wikipedia.
\(^7\) Beijing's economy - Going for gold. Economist 25.08.2008.
\(^9\) The Olympics have not brought Beijing’s businesses the boom they hoped for. The Economist 14 August 2008.

2004 Summer Olympics, Wikipedia.
In 2008, however, it was reported that almost all of the Olympic venues had fallen into varying states of disrepair and that the annual cost to maintain the sites was estimated at £500 million. This conclusion is supported by other reports 10. Consistent with recent literature in this area, Kasimati and Dawson 11 considered that whilst the impact effects were quite strong during the preparation phase and the year the Games took place, the long-term economic legacy effects appear to be quite modest.

Regarding the impact on housing, a report written by Theodoros Alexandridis 12 considered that ‘the final lines of the chapter of modern Greece entitled “Olympic Games 2004” have yet to be written. An important part of the Olympic heritage has yet to be taken advantage of, constituting for the time being more of a burden than an asset.’ Regarding housing, the Olympic Games left Athens with a significant infrastructure that will ameliorate the living conditions of all its inhabitants, while the Olympic village will, despite all the problems it has encountered, provide a house to approximately 3,000 families, an important contribution to social housing in Greece.

3.3 Sydney 2000
Price Waterhouse Coopers 13 concluded that the Sydney Olympic Games delivered substantial benefits to Sydney, New South Wales and Australia. These included:

- some $3 billion in business outcomes, including:
  - $600 million in new business investment
  - $288 million in new business under the Australian Technology Showcase
  - almost $2 billion in post-Games sports infrastructure and service contracts
  - injection of over $6 billion in infrastructure developments in NSW
  - injection of over $1.2 billion worth of convention business for NSW between 1993 and 2007
  - over $6 billion in inbound tourism spending during 2001
  - greatly enhanced business profile for Sydney, NSW and Australia through the equivalent of up to $6.1 billion worth of international exposure
  - greater expertise and confidence in tendering, both domestically and overseas, on large-scale projects.

The total economic stimulus from the Sydney Games ranked among the highest to that time (Price Waterhouse Coopers, 2001) 14. There were undoubtedly clear, lasting financial rewards for the substantial investments made for many interest groups in the city, region and even country as a whole. The experience gained by organising successful Games suggests that the Games can open up substantial business opportunities, which is a further indication of the longer-term benefits for a city. However, the PWC report goes on, it would be a mistake to assume that events such as the Olympics always were unquestionably beneficial.

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10 A year on, legacy of Athens Games is unfulfilled dreams. Pakistan Daily Times, 12 August 2005.
Summary of Economic impacts of the 2000 Sydney Olympic Games

<table>
<thead>
<tr>
<th>Business:</th>
<th></th>
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<tbody>
<tr>
<td>New Business generated by the Australian Technology Showcase</td>
<td>288 million</td>
</tr>
<tr>
<td>International exposure for business profile of Sydney, NSW and Australia</td>
<td>6.1 billion</td>
</tr>
<tr>
<td>Business events committed since the end of the Games</td>
<td>203 million</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>The Games:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ticket sales revenue for organisers</td>
<td>610 million</td>
</tr>
<tr>
<td>Sponsorship revenues for organisers</td>
<td>680 million</td>
</tr>
<tr>
<td>Private sector investment on Games-related venues</td>
<td>1.1 billion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>City infrastructure:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure development injection</td>
<td>6 billion</td>
</tr>
<tr>
<td>Sydney airport upgrade</td>
<td>2 billion</td>
</tr>
<tr>
<td>Post-Games sports infrastructure and service contracts</td>
<td>2 billion</td>
</tr>
<tr>
<td>Beautification of Sydney CBD</td>
<td>320 million</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tourism:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Inbound tourism spending during 2001</td>
<td>6 billion plus</td>
</tr>
</tbody>
</table>

Source: Price Waterhouse Coopers, 2001 (in Clark, 2008 Table 3.20 – see footnote 14)

It was noted by Clark (see footnote 14) that the Sydney Olympics, ‘yielded substantial financial and economic benefits to New South Wales and Australia, as well as positively impacting on the city’s social and cultural assets’. This is an important point, as it refers to the wider regional benefits as well as to the host city itself.

Another report about the Sydney Games’ legacy, in agreement with Price Waterhouse Coopers, considered that, ‘the enormous success of the Sydney 2000 Olympic Games can be measured not only in terms of the quality of the festival of spirit, culture and celebration of the Games itself, but also in the sense that the process of bidding, preparing and staging the Games represents a significant catalyst for economic, cultural and social change’. Benefits arose from the level of economic activity around the staging of the Games, to upgrade sporting, entertainment and general urban infrastructure, and to showcase Sydney for world-wide business opportunities, including tourism.

Sydney, as a metropolis, learnt and upgraded skills to manage events, transport and deliver goods and services, at the same time as the centre of the city had been upgraded with wider footpaths, improved lighting and selective additions to cultural and development infrastructure. New expressways were built and key road interchanges developed along with improved management of the traffic system – not to mention a substantial upgrading of Sydney Airport, earlier than would otherwise have occurred, to standards in keeping with Sydney’s status as an international city and tourist destination.

For Sydney, New South Wales and Australia, the Sydney 2000 Olympic Games provided massive exposure and publicity to the world and in many cases a first or a renewed awareness of Australia. The business opportunities identified and the networks established internationally, particularly with the many thousands of business people who visited Australia during and prior to the Games, will continue to provide opportunities into the future for Australian business and trade, particularly in the Asia-Pacific region where Australia has a growing status as a stable and developed country with benefits to offer the region and the rest of the world wanting to do business there.

A further review by Richard Tibbott in 2001, confirmed the above findings, and concluded that, ‘the direct impact of investment and visitation is clear if short-term, but the broader benefits would be proven in the longer term, providing a platform for the nation’s corporations to excel and provide a showcase for a city region to attract inward investors. These notions remain assertions supported by limited anecdotal evidence’. Further, Tibbott concluded that,

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‘the short-term benefits for Sydney are clear, and medium-term difficulties with the economic viability of the Olympic village (Homebush) and key venues are perhaps expected and can be worked on. At the same time, the Olympics help to create a more competitive economic attitude in Australia, and it is the benefits that are being generated by this that will outweigh and outlast other factors’.

The Olympic Park itself continues to attract many visitors and has been developed as an important business and exhibition centre.

3.4 Atlanta 1996

Ten years after the Olympic Games were held in Atlanta, the city was still being transformed by an Olympic legacy that changed the face of downtown Atlanta and strengthened the city’s position as a global commerce hub. The 1996 Games drew more attendees than any prior Olympic Games, created a $5 billion economic impact and branded Atlanta. A worldwide Lou Harris poll revealed that positive perceptions of Atlanta among corporate decision makers nearly doubled after the Olympic Games. Highlights of a ten years legacy include that today Atlanta is home to nearly 1,600 international companies, representing a more than 30 percent increase in international companies since the Olympic Games.

In a BBC article in 2006 (ten years after the games), Kurt Barling discussed the legacy of the Atlanta games and drew tentative conclusions that for the city itself, the games had a sustained impact (but did not say specifically what the impacts were). For example, he concluded that, ‘…there is a sense that more widely Atlantans attribute the transformation of their city to the Olympics’; and, ‘…a few days ago it [Atlanta] opened a new wing in its history museum dedicated to the Olympic Games. It clearly put Atlanta on the International map, but as the exhibition recognised it also gave Atlantans an excuse to think big’; and ‘…last week the City of Atlanta hosted a massive outdoor party in Centennial Olympic Park to celebrate 10 years of Olympic legacy. Whilst internationally few people may recognise it, Kurt Barling considered that many Atlantans were quietly (and not so quietly) confident that they would still be reporting fresh legacies from the 1996 Olympics in another decade’s time.

3.5 Barcelona 1992

The labour market of Barcelona and its hinterland, benefitted substantially in the run up period to the Games. Between October 1986 and August 1992, Barcelona’s general unemployment rate fell from 18.4% to 9.6%, while the Spanish figures were 20.9 and 15.5% respectively. In addition, Olympic-linked investment in infrastructure and facilities led to additional permanent employment of an estimated 20,000 people. The immediate impact of the Olympic Games was highly notable. However, what was surprising was the impact and scale of the permanent Olympic legacy and the continuation of this impact.

3.6 Other appraisals of benefits

In addition to the examples provided in the previous sections, Jones Lang LaSalle (2009) compiled examples of historic regeneration from three past Olympic Games, as follows:

**Beijing:**
- Transport improvements included 5 additional metro lines completed between 2004 and 2008, contributing over 50 new stations. A further 13 lines will be completed or have major work.

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17 Sydney Olympic Park: A living legacy for the people of Australia. 2006 Sydney Olympic Park Authority
18 Esther Camp, Metro Atlanta Chamber of Commerce and Richard Orr, Central Atlanta Progress.
19 Atlanta’s Olympic Legacy Kurt Barling, BBC 2006
20 The Economic Impact of the Barcelona Olympic Games, 1986-2004 – Ferran Brunet I Cid, Faculty of Economics and Business Science, Universitat Autonoma de Barcelona
Planting of new green space within Beijing in the 2 years prior to the Olympics alone, was in the region of three times the size of New York City’s Central Park.

37 venues, 22 of which were new with 15 refurbished.

Athens:
- Rehabilitation of almost 300ha of disused quarries, 250ha of old garbage tips and 600 ha of former army camps.
- Establishment of park, recreation and environmental education areas covering 250ha of urban space (including the remodeling of 60 dry and seasonal river beds into landscaped parks).

Sydney:
- Clean up of a 760ha site where previously there was swamp, and a mix of semi-urban uses.
- A new airport rail-link, which was completed at a cost of US$500 million.
- A US$350 million expansion of Sydney Airport.

Jones Lang LaSalle (see footnote 21) also divided success measures of benefits into four categories and provided examples:

Economic benefits
GDP is often cited to illustrate the economic impact of a major sporting event. It is challenging to split out the impact of an Olympic Games, which can vary dramatically depending on the economic maturity of the host location. Beijing for example was experiencing 14.5% year on year growth between 2001 and 2007, of which the Olympics was estimated to contribute 1%.

Urban regeneration
Examples would include the re-use of venues and the Olympic village developments into housing, sporting and community legacies. In addition, transport improvements, such as the movement of two rail lines in Barcelona that were previously isolating the City from the Olympic Village area.

Tourism and branding
The Beijing Olympics were viewed as China’s coming out party. Similarly, although London has an already well established reputation, VisitBritain estimate that the London Olympics will benefit the UK inbound visitor economy by about £2 billion between 2008 and 2017, with two thirds of that generated post Games.

Environmental benefits
Environmental and sustainable benefits were a pivotal part in the London Bid, as they were in Beijing. Historically, although the Seoul Olympics allowed the City to tackle air pollution, it was probably the Sydney Olympics which first truly capitalized the event to clean up contaminated land and incorporate renewable energy systems and water facilities.

3.7 The London Olympics 2012
Price Waterhouse Coopers were commissioned by the DCMS (Department of Culture, Media and Sport) to undertake an analysis as part of an Olympic Games Impact Study to assess the likely national, regional and local impacts of hosting the Olympics in London. The study examined three categories of impacts: economic, social and environmental.

Clark described the ‘urban development benefits over the next eight years’ (2008 -2016) for the London Summer Olympics 2012 as follows:

Up-skilling of 70,000 volunteers, 7.9 million spectators will bring an estimated GBP £2.1 billion extra revenue, of which GBP £400m will affect areas outside London; 8,000 jobs in construction each year up to 2010, rising to maximum of 20,000.

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22 Olympic Games Impact Study – Price Waterhouse Coopers, 2005
23 Local Development Benefits from Staging Global Events – Greg Clark, 2008, OECD
Impact on GDP

Dr Adam Blake at the University of Nottingham \(^{24}\) analysed the likely impact of the Olympics on GDP and concluded that the total UK GDP in the period from 2005 to 2016 would be increased by £1.9 billion as a result of the Olympics. Over the same period, the increase in London’s GDP is estimated at £5.9 billion. In practice, some of this benefit is likely to accrue to non-London residents.

The largest economic impact in GDP terms (£3.362 billion) would occur in London during the pre-Games construction period whereas, for the UK as a whole, the impact on GDP would be greatest over the period of the Olympics (at a level £1.067 billion).

There is an 84.4\% chance that the Olympics will have a positive impact on UK GDP over the period 2005-2016: in London the comparable probability is 95.3\%. However there is a 10\% chance that the UK will lose £517 million. The study by the University of Nottingham suggests that for the UK as a whole and for London between 11 and 12\% of the effect on GDP is attributable to expenditure on infrastructure.

Impact on Trade

A report by Rose and Spiegel \(^{25}\) considered that economists are skeptical about the economic benefits of hosting "mega-events" such as the Olympic Games or the World Cup, since such activities have considerable cost and seem to yield few tangible benefits. These doubts are rarely shared by policy-makers and the population, who are typically quite enthusiastic about such spectacles. Using a variety of trade models, Rose and Spiegel show that hosting a mega-event like the Olympics has a positive impact on national exports and that the effect is large, with trade being around 30\% higher for countries that have hosted the Olympics. Interestingly however, they also found that unsuccessful bids to host the Olympics have a similar positive impact on exports and concluded that the Olympic effect on trade is attributable to the signal a country sends when bidding to host the games, rather than the act of actually holding a mega-event.

Inward Investment

Studies of the impact of previous Olympics have indicated that inward investment has been attracted by preparations for the Olympics which has increased the host cities’ global profile and by the legacy of the additional facilities afterwards. Information about the impact of Olympic Games and other global events on Foreign Direct Investment (FDI) however is very limited. In a review of 21 global events (including 5 Olympic Games) \(^{26}\), only two citations of impacts on inward investment were made (Lisbon Expo 98 and Manchester Commonwealth Games 2002).

London is already an established global city and a prime destination for inward investment in the UK and Europe. London, however, faces competition from other established and emerging cities, so by raising the profile of London compared to its European competitors, the Olympics could be used to promote London internationally as a business destination and to attract additional investment projects given the boost that London will receive in awareness and infrastructure. In particular, the Games offer the opportunity for targeted campaigns for Thames Gateway to promote ‘new’ London.

A recent UKTI\(^{27}\) briefing cited the following information (source unknown):

Previous Olympic hosts experienced the following business legacies:

- Catalonia attracted 200 new FDI projects after Barcelona hosted the 1992 Games.
- 1,600 companies moved to Atlanta in the ten years after it hosted the Olympics in 1996.
- The 2000 Games in Sydney produced A$2 billion of business outcomes, including inward investment and new business collaborations.

\(^{24}\) The Economic Impact of the Olympics, Adam Blake, University of Nottingham, 2005
\(^{26}\) Local Development Benefits from Staging Global Events – Greg Clark, 2008, OECD.
\(^{27}\) UK Trade and Investment, London. Personal Communication.
Business Support, Innovation and Diversification

Key issues are as much around developing and understanding of the potential economic impacts of the Olympics as they are around identifying what can be done to secure the maximum benefit for the local area, for London and for the UK as a whole.

Over the period 2005-2016 there would be an average of 119 additional firms across the UK as a whole and 439 additional firms in London with the biggest impact arising during the Olympics (2012).

The major growth sectors in the UK would be construction and passenger land transport, reflecting the expected impacts during the period of the Olympics whilst the impact in London would be concentrated in three sectors: passenger land transport, business services and sports facilities.

As a result, there are likely to be significant opportunities to support new firm development, supply chain improvement and cluster formation within the local north east London and wider London economy.

Whilst the economic analysis points to the Olympics having the potential to generate positive economic impacts, consideration has been given to what support would be appropriate to maximize these benefits. For example, consideration is being given by the London Development Agency and other public sector bodies to examining how to maximize the creation of employment opportunities which can be filled by local people before, during and after the Olympics through, for example, setting up a ‘New Olympics Club’ of suppliers and ensuring relative wage levels for business products and services supplied to the Olympics.

Environmental Benefits

The London Olympics have taken an innovative stance regarding environmental aspects of the games. Jones Lang LaSalle 28 have highlighted the environmental benefits and noted that none of the previous games had a proper sustainability plan. Sydney was most similar to London as it built on piece of derelict land.

London ‘One Planet’ Olympics is the sustainability plan for London 2012, with 5 key theses and 12 objectives:

- climate change
- waste
- biodiversity
- inclusion
- healthy living.

**Waste:** The intention is to reclaim, reuse and recycle 90% of demolition waste and 90% of construction waste.

**Energy:** 15% CO₂ reduction above building regulations and post-2012 – 20% of energy supplied to be from renewable sources.

**Water:** Venues to use 40% less and homes 30% less drinkable water than current averages.

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