

London 2012 – From vision to reality

Commission for a Sustainable London 2012
Post-Games Report

November 2012



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Executive Summary

London 2012 set out to deliver “the most sustainable Games ever” and to deliver unprecedented levels of access and inclusion under the heading “everyone’s Games”. As the assurance body for the London 2012 programme we have reported extensively on the preparations. This report describes our work during the Games and examines whether the promised levels of sustainability were actually delivered on the day.

Whilst there are always things that can be improved we have no hesitation in confirming that London 2012 has delivered the most sustainable Games ever. We congratulate all the delivery bodies and we are proud to have made a small contribution to this achievement.

LOCOG, TfL, the GLA and their many partners responsible for staging the Games were provided with the best possible platform by the ODA. All of the venues and the Olympic Village were successfully constructed to the highest sustainability standards with unprecedented levels of energy and water efficiency, well designed and constructed using sustainable materials. The infrastructure underpinned this commitment. The use of combined cooling, heat and power and black water recycling ensured that energy and water were not only conserved, they were supplied from more sustainable sources. The presence of the Channel Tunnel Rail Link, Stratford International station, extensions to the DLR, London Overground and modifications to the Jubilee Line came together to make the Olympic Park one of the best connected places in Europe for public transport. The final piece of scene setting was the visionary design and delivery of the natural environment by the ODA. This not only provides Europe’s biggest new urban green space for 150 years but also provided a stunning natural backdrop to the world’s premiere event.

Our work during the Games comprised assurance by our professional team at most venues, in the last mile and on routes to venues. This is supported by our assurance programme during test events and our long history of assuring the preparations. We have also reported our communication activities during the Games. We do not yet have access to any performance data from London 2012. We are advised that this will be published in December 2012 in the final London 2012 Sustainability Report and we will provide an independent commentary on this report.



Shaun McCarthy

The food we eat impacts sustainability in every way and LOCOG set out an ambitious vision for healthy, fresh, sustainably sourced food that would suit all cultures, tastes and budgets. This was a first for major event catering and was achieved at most venues. However, some Live Sites commissioned by the GLA and some local authorities were not compliant and some non-LOCOG sites did not allow people to bring their own food, making a visit expensive for families even though tickets were free of charge. Free drinking water was available at every venue, another Olympic first. There were some problems with shortage of supply and virtually no signposting but in general, this initiative is to be commended.

London 2012 was the first summer Games to declare a target of zero waste to landfill with 70% re-used, recycled or composted. Typical events achieve 15%. We are confident from our observations that this will be achieved. Meticulous attention to recyclable and compostable packaging, an innovative and eye catching three bin system for spectators and exclusive use of a materials recycling facility have combined to make this possible. The system was not perfect but low levels of litter and higher than normal levels of source segregation provide another exemplar that others would do well to follow.

Having been provided with excellent energy infrastructure and efficient buildings, LOCOG's energy conservation plan was disappointing. Despite our representations in 2011, LOCOG was very late in developing an energy conservation plan and in recruiting people with responsibility for this during the Games. There is no doubt the people eventually recruited made a difference and the target 20% energy efficiency improvements are very likely to be exceeded. However, so much more could have been done had planning started earlier and staff had the opportunity to build relationships with venue teams and influence their plans.

We were very impressed with the logistics operation. Intelligent planning, use of alternative fuelled vehicles and innovative demonstration projects using river transport all featured in a comprehensive plan to deliver a vast range of goods efficiently and with minimum disruption to London's population.

A key feature of LOCOG's strategy was the ground-breaking sustainable sourcing code. We have assured this initiative in previous reports but in this case we focused on Games-time compliance with requirements for sustainable timber, PVC free solutions and low global warming impact coolants. Although compliance with timber requirements was excellent, the influence over hire markets providing cooling and PVC was less effective.

We were very impressed with the sustainability messages coming through the ceremonies and the attention to detail exemplified by the Look and Feel team in using sustainable materials, minimising the amount of materials used and the impact of the change-over from Olympic to Paralympic branding. Spectators and the general public were able to point to the waste strategy and the green spaces as examples of sustainable practice but limited information was made available about the sustainability of the venues and village buildings and infrastructure.

One of the biggest challenges to London 2012 was to ensure that the huge number of spectators, volunteers, staff and Olympic and Paralympic family members got to their venues easily, safely and sustainably, enjoyed exemplary levels of accessibility during the Games and returned home in the same manner. Contrary to speculation in the media, London's transport system worked brilliantly during the Games and credit should be given to the team at Transport for London. The "Last Mile" experience was mixed, with differences in local authority policies on issues such as waste management causing some confusion. London 2012 was the first Games to offer a comprehensive mobility service at all venues and accessibility during the Games was generally very good. Facilities for blind and deaf people were subject to some shortcomings but access for people with restricted physical mobility was generally very good.

We are pleased that some of the lessons learnt from the Games will already be available for wider application through London's learning legacy website. We hope that future major events and infrastructure projects take note of what has been achieved by London 2012 and raise the bar even higher in future.



Shaun McCarthy

Chair of the Commission for a Sustainable London 2012

Thematic Assurance Overview

The Commission focused its assurance role during Games-time along thematic lines. This introduction covers the key objectives, scope and assurance criteria that guided our assurance.

Purpose of Assurance

The purpose of assurance during Games-time was **to assure the delivery of key Games-time sustainability objectives, targets and aspirations.**

In fulfilling this overarching purpose, the Commission's Games-time assurance objective was to conduct process assurance (also known as work flow assurance) of key processes/themes that span the London 2012 programme during Games-time.

Work flow assurance is a way to assure key Games-time sustainability processes from beginning to end (for example following the food supply chain). LOCOG suggested that this type of assessment would be most useful and complement LOCOG's own internal compliance monitoring. It also complements the Commission's previous assurance activities.

During Games-time, the Commission placed emphasis on the strategic decisions in the workflow process, and the way in which the process has worked (or not) to deliver outcomes rather than on assuring specific outputs or outcomes themselves.

In addition to the Commission's role, London 2012 carried out its own compliance monitoring in relation to its objectives and targets.

Scope of work flow assurance

The themes to be assured on a workflow basis were identified through our knowledge of the key processes at work during Games-time and in consultation with LOCOG.

- 1 Food, including hospitality
- 2 Waste
- 3 Energy, including cooling
- 4 Logistics
- 5 Environmentally Sensitive Materials (HFC, PVC, timber)
- 6 Look and Feel including diversity and volunteers
- 7 Accessibility/Transport
- 8 The 'Last Mile' on approach to venues

Work flow assessment criteria

The key criteria which were applied as part of the workflow assessment across any theme include:

- Does the process deliver the required outcome? (for each stage)
- Is the process compliant with relevant standards/targets/aspirations/regulations?
- Are all products delivered using the approved process?
- What issues arose during the process which required resolution?
- Were these issues fully resolved – what issues remain unresolved?
- What sustainability principles are at work at this stage? E.g.
 - Energy and water efficiency;

-
- Resource re-use and optimisation
 - Diversity
 - Use of SMEs in supply chain
 - Avoiding environmentally sensitive materials
- Are there any perverse outcomes from the application of the process?
 - Stakeholder views about the process

The key dimensions of each thematic assurance have included:

- Size and scope of the operation
- Stages in each process
- Locations involved in each process
- Personnel involved in each process
- Venues involved in each process
- Stakeholders involved in each process
- Assurance time for each process

Each thematic review considered:

- Thematic definition and parameters
- Findings and observations
- Lessons for the future
- People we spoke to
- Relevant CSL Recommendations
- Level of confidence in London 2012 meeting its targets and commitments. We have based our assessment on all of our work to date including our observations during Games-time.

In addition the report covers each of the London 2012 venues the Commission visited and provides a short description and commentary of the assurance carried out at that location.

Provision of data

Following the Games the Commission asked LOCOG to provide performance monitoring data across the range of themes assured. We have been advised that LOCOG will be publishing its complete data in December 2012. We will provide independent commentary once this final London 2012 Sustainability Report has been published.

People we spoke to

As part of our assurance we spoke with many London 2012 staff and volunteers, sponsors and to contractors working across venues in for example catering, waste and energy services. We also engaged with spectators about their experience of the Games. These conversations have provided weight to our own observations and they are reported throughout this report where appropriate.

Themes

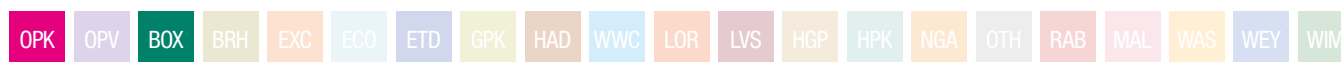
OPK	Olympic Park
OPV	Olympic and Paralympic Village
BOX	Box Hill
BRH	Brands Hatch
EXC	Excel Centre
ECO	Earls Court
ETD	Eton Dorney
GPK	Greenwich Park
HAD	Hadleigh Farm
WWC	Lee Valley White Water Centre
LOR	Lords
LVS	Live Sites
HGP	Horse Guards Parade
HPK	Hyde Park
NGA	North Greenwich Arena
OTH	Other Stadia
RAB	Royal Artillery Barracks
MAL	The Mall
WAS	Wembley Arena and Stadium
WEY	Weymouth
WIM	Wimbledon

Food

Venues assured under this theme – Games-time:

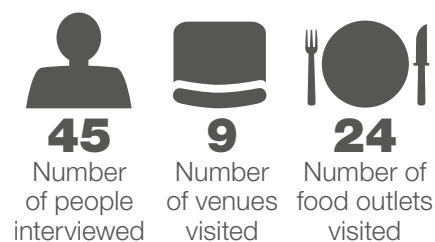


Venues assured under this theme – Test Events:



Level of confidence:

We are confident that LOCOG met its Food Vision targets with some minor exceptions.



7
Number of catering kitchens visited

2
Number of Olympic dining rooms

London 2012 Targets and Commitments

London 2012 Food Vision

- 1 We will enhance everyone's experience of the Games by celebrating the great diversity and quality of British food, and delivering it at affordable prices.
- 2 By nurturing commercial and educational partnerships, we will leave a strong, sustainable legacy for London and the UK.

Other reported aspirations:

- 1 Menu prices for spectators – between £5 and £9 for a main course depending on the selection.

Definition

The key focus for the Commission's assurance of the food theme is the way in which the London 2012 Food Vision has been implemented and the way it has altered the practices of entities within the food supply chain (from the farmer through to the caterers). The Food Vision sets a framework for a number of specific contractual requirements including, for example, to source Fairtrade products including tea, coffee and sugar, to source all fish products from MSC certified sources and all meat from Red Tractor assured sources.

Findings and commentary

Food quality and overall compliance with the Food Vision

Findings

- In assessing compliance with the Food Vision, we interviewed catering staff, visually inspected what was for sale and asked to see evidence of certification or compliance with MSC and Red Tractor schemes where appropriate.
- All LOCOG official venues were Food Vision compliant with one exception. One cluster of caterers at the top of Greenwich Park were found not to be Food Vision compliant, due to a lack of any Fairtrade products on sale, evidence that the fish on sale was not MSC source compliant and that the meat for sale was not Red Tractor assured.
- The following Live Sites and unofficial ticketed venues were Food Vision compliant – Weymouth Nothe, Potters Field.
- We were advised by LOCOG and in some cases the Live Site operators that the following Live Sites and unofficial venues had



Indian food on the Olympic Park.



Olympic Park food outlets.



Food at a Live Site.

Food availability

Findings

- We became aware that during the first few days of the Olympic Games food was running low in a range of locations.
- LOCOG initiated a 'swap-shop' early on to allow caterers to share resources and to help level out peaks and troughs in food supply.
- Logistical issues were largely overcome within a few days for food availability.

Commentary

- We recognise that projecting precise food requirements is difficult and we believe LOCOG achieved adequate food availability when considered against the entire Games period.

Restrictions on food and water

Findings

- Airport style security was imposed at all venues including Live Sites. The impact of this decision was uneven. At LOCOG venues spectators were unable to bring in more than 100ml of liquids. At BT London Live Sites, and at the Nothe in Weymouth, spectators were unable to bring in liquids above 100mls or food. At local authority Live Sites as far as we are aware, no restrictions were put in place.
- Live Site operators in Weymouth and for BT London Live claimed that they were trying to retain policy consistency with LOCOG's food and drink policy in restricting food and drink brought into venues. However, LOCOG argue its security policy was available well in advance of the Games.
- Security restrictions on liquids meant that venues and Live Sites were required to provide free drinking water.

Commentary

- The non-LOCOG Live Sites food and drink restrictions created problems for people who brought picnics, who had large families to feed or who had specific dietary restrictions.
- It is not clear why, once LOCOG had announced it would allow food to be brought into venues, Live Site operators continued to prohibit food being brought into venues.
- The restrictions on bringing food and drink into Live Sites generated some public comment and hindered the capacity for spectators to have an affordable day out. We believe this contravened the principle of it being 'everybody's Games'. While we recognise that the Live Site contract was geared around these venues being operated at no cost to the public purse and no entry fee to the public, we believe that this principle should have been extended to ensure that those spectators who wanted to could truly guarantee an affordable day for the whole family by being able to bring their own food into the venues.

Food

Accessibility of food outlets

Findings

- Food outlets in all venues were required to be accessible to all spectators.
- The clustering of food outlets, and the need to meet high volume, high demand periods meant that queues were tightly controlled using portable queuing tape.
- We observed wheelchair users and received feedback from LOCOG staff at Brands Hatch that the tight queuing method was difficult to navigate.
- Most, but not all, food counters at venues were inclusive of accessible drop-down sections. LOCOG mobility staff at Brands Hatch noted that they needed to be on hand to assist disabled spectators in approaching some catering outlets.
- We observed many disabled customers being assisted by their friends and family members at catering outlets, and while this assisted individuals at the time, disabled people should be able to access services independently of the help of fellow spectators.
- Other than at Brands Hatch and in the Park Olympic Village Athletes Dining Hall, we are not aware that venue services volunteers were able to be proactively on-hand to assist disabled people to access food venues.

Commentary

- The work of London 2012 to make its catering operations accessible is largely to be commended. However, there is an opportunity to learn from the operational experience of these Games in ensuring that queuing systems, and the availability of staff and volunteers to assist customers to better access catering outlets as well as opening and managing foodstuffs are planned into the general accessibility offer.

Knowledge of the Food Vision at catering outlets

Findings

- We assured knowledge of what was on sale and how it complied with the Food Vision.
- We asked staff at 2-3 catering outlets at all venues in which we assured the food theme about their knowledge of their own menus and of the Food Vision.
- Catering staff had widely varying amounts of knowledge about their products, from the majority who could only name Fairtrade products to those who could talk about Red Tractor and MSC fish standards.
- Catering managers on hand were better informed about the availability of Fairtrade products, vegetarian options, gluten free options and halal/kosher options for example and about Red Tractor and MSC standards.



Drinking water fountain at the Royal Artillery Barracks.



Drinking water at Horse Guards Parade.



Freedom Food Pork.

Related Recommendations



Food Review
Expectations only



**Sustainable Games
Preparation Review**
Expectations only



Governance Review
Recommendation 3.21

Commentary

- Training provided to catering staff was evident although staff and managers could have been more confident in their knowledge.

Fresh water provision

Findings

- LOCOG committed to provide free drinking water at all venues.
- At venues which were purpose built, drinking fountains were installed.
- At borrowed venues, concessionaires were required to provide free drinking water.
- There were some initial teething problems at borrowed venues where some concessionaires were initially reluctant to provide free water. This was quickly resolved.
- Early in the Games it became clear that there were long queues for free drinking water and that water was running out.
- LCOOG partially resolved this problem by re-provisioning and installing more drinking fountains.
- Insufficient signage also hindered easy access to water, although there were volunteers available to ask directions.
- More drinking water outlets were installed during the Paralympics although adequate signage was still lacking.
- We observed Live Sites venues to have well-signed drinking water stations with adequate provision.

Commentary

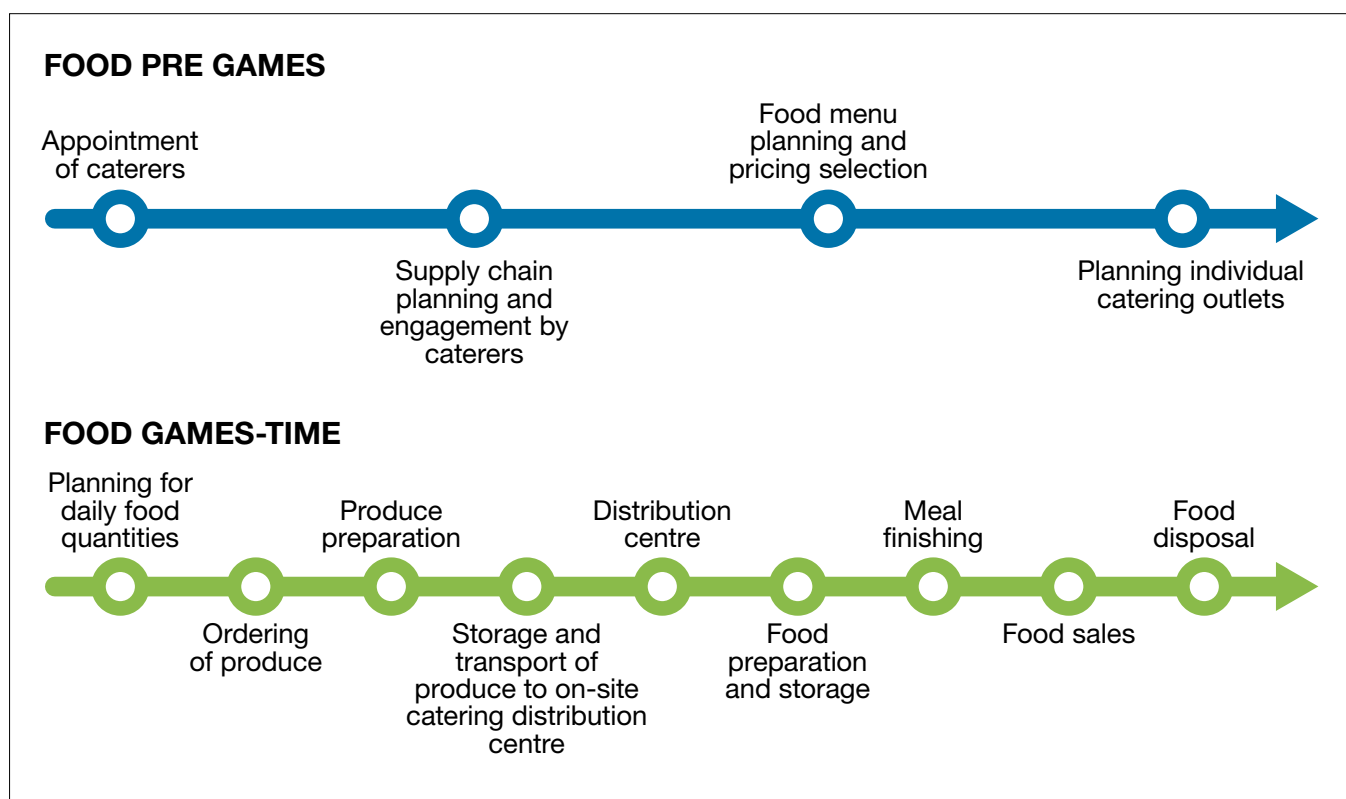
- The provision of free drinking water across the games period was a world first for any Olympic or Paralympic Games
- Free water provision was initially considered by LOCOG in 2006. It was arguably a requirement following the decision to impose airport-style security banning people from bringing liquids onto venues. We are aware that LOCOG faced challenges very early on in negotiating this provision with its pouring rights sponsor which had exclusive rights to the provision of bottled water in venues.
- The active approach to providing drinking water required innovation on the part of LOCOG to determine the appropriate design of water fountains, temporary water provision and assessment of demand. Future Games organisers should provide adequate quantities of free, accessible drinking water and should make it easy to find.
- Provision of free drinking water remains a considerable sustainability achievement given that this approach reduces the amount of empty bottle waste as well as sending a powerful behavioural change message to spectators about the benefits of tap water in comparison to bottled water.

Food

Lessons for the future

- Bringing food into venues and free water provision – The London Games has shown that the public want to be able to access free drinking water. The experience also acts as a powerful behaviour change driver for consumers of bottled water. Future events would do well to follow LOCOG's lead – albeit with a comprehensive approach to providing sufficient and well-signed free water supplies.
- Affordability – The tension between providing healthy and diverse food menus and food at affordable prices is at play when setting food pricing regimes. By allowing spectators to bring their own food LOCOG was able to avoid criticism that the Games were largely unaffordable. However, spectator reaction to food prices demonstrated that greater clarity is required about food pricing early on so that spectators come adequately prepared.

Stages of the process



Waste

Venues assured under this theme – Games-time:

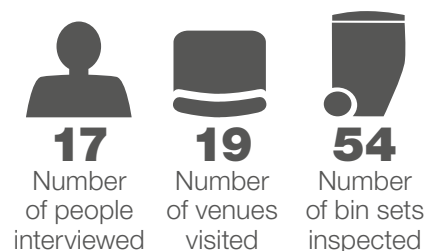


Venues assured under this theme – Test Events:



Level of confidence:

We are confident that LOCOG met its waste targets and made significant progress towards meeting its compostable packaging aspiration.



10
Number of waste compounds visited

2
Number of waste processing facilities visited

London 2012 Targets and Commitments

- 1 No waste arising during the 77-day Games period will be sent directly to landfill (zero waste to landfill).
- 2 Treat all waste as a potential resource and ensure that at least 70% of Games-time waste will be reused, recycled or composted.

Other reported aspirations:

Utilisation of food catering packaging systems that maximise the potential for recycling and composting and minimise the potential for contamination and ultimately disposal – preferably involving a single-stream material approach for bottles and other food catering packaging items.

Definition

This theme focuses on the process and decisions involved in shaping plans to deliver waste targets and the outcomes at Games-time. The areas we covered were:

- Decisions on the processes and systems that would be needed to meet the zero waste to landfill and 90% reuse, recycling and composting targets.
- Decisions around segregation methods, redesigning packaging and communications methods.
- Assuring waste segregation front and back of house.
- Assuring waste compounds and the waste and cleaning services.
- The sorting and segregation processes at the Barking waste facility.

Findings and commentary

Consumer use of the bin system

Findings

- LOCOG commissioned bespoke bins to support its three stream source separation of waste, into recyclables, residual, and compostables.
- The bins were of different colours with matching bin bags, and the residual waste bin was designed to be the smallest.
- Matching colour coding was placed on food packaging to show spectators where to put their rubbish.

Waste

- The three source separation approach had been trialled during the test events but the bespoke bins were only available for some test events immediately prior to the Games period.
- The bespoke bins were only used at the front of house, with coloured wheelie-bins used in workforce areas.
- Where the bin system was not applied (for example at transport malls and security malls) a three bag holder was used, with the three streams being indicated by the colour of the lids and associated bags.
- An additional bin for ponchos was added to the bins sets initially but these were generally not required and so became a general receptacle for any waste (LOCOG realised this after the first week of the Games and removed or re-purposed these bins).
- Not all venues were supplied with the bespoke bin system – many borrowed venues relied on existing waste management systems to collect waste and Box Hill did not fully implement LOCOG's streaming approach.

Commentary

- In general the bins were being used appropriately by spectators and by LOCOG staff.
- There was a shortage of residual waste bins across all venues and so in many cases bin sets comprised of recycling and compostable bins and there is a concern that this may have resulted in contamination of these streams with residual waste.
- The design of the bins was a talking point amongst spectators who were often observed closely reading the signage and deliberating over which bin to use.

Front of house waste stream contamination

Findings

- We were advised by LOCOG that front of house waste would amount to a significantly smaller proportion of waste than, for example, food waste from caterers and in workforce dining areas. In this context the value of a front of house waste source separation strategy was reviewed for its potential to impact positively on spectator behaviour moreso than its overarching impact on overarching waste contamination.
- To assess the level of cross-stream contamination in the bin system we selected bin sets at random across venues for closer visual inspection. Across venues we observed low to moderate levels of contamination in the bespoke bin sets.
- Recycling bins tended to attract the least contamination.
- Residual waste bins had some of the highest levels of waste which could have been streamed into other bins.
- Where bins were not used, and instead bag holders were employed,



Three bin system with additional poncho bin.



Bins with poncho bin converted to residual waste.



Poncho bin attracting residual waste due to lack of residual waste bin.

Waste



Bins on the Greenway.



Assuring the contents of a bin.



Existing bin at Greenwich Park overflowing with waste.

the level of contamination was very high. LOCOG indicated that this waste was being sorted by its waste contractor at the waste depot.

- Assistance of volunteers for people to find the right bin seemed only in evidence in the Athletes' Villages.

Commentary

- A number of factors may have contributed to the areas in which high contamination levels occurred, including the lack of assistance for spectators, the lack of clear signage on bag holders, potential confusion caused by items which were neither recyclable nor compostable and the relatively small size of signage on food packaging and on the bins themselves.
- The source-separation approach appeared to work sufficiently well for it to be refined and reapplied at future major events.

Littering and bin-emptying

Findings

- LOCOG engaged cleaning contractors to pick litter and to empty bins at every venue.
- In most cases bins were emptied well within time, with some exceptions.
- There was very little littering by spectators observed at any venue with the exception of the food area at Box Hill throughout the Games period.

Commentary

- A number of factors may have impacted on the lack of littering including, limits on the amount of food brought into venues, the clear waste disposal approach including messaging, respect of spectators for venues and for the 'Olympic brand' and the number and positioning of bins.

Waste signage and messaging

Findings

- We reviewed signage pointing people to bins, and messaging on bins about which waste goes where, as well as indirect messaging.
- Waste signage was present on the bespoke bin systems and in some cases, above these bin sets. At each venue, spectators were asked to take their rubbish with them, and in the information provided with tickets spectators were also asked to take their rubbish with them.

Commentary

- Waste signage was generally clear.
- Areas of confusion acted upon by LOCOG included the impact of sponsor branding of bins, leading consumers to match the sponsor product to the bin rather than to the waste stream (thereby contaminating waste streams). During the Paralympics, these stickers were removed or covered up.

Waste

- The Games acted as a giant experiment in waste source separation for the event industry and one which has achieved a degree of success.
- It will be important that waste experts consider whether improvements to signage could promote even greater source separation.

Food packaging

Findings

- The Packaging Guidelines promised that all food packaging for the Games would be compostable or recyclable and using a single waste stream where possible. This aspiration was close to being achieved.
- Food packaging included cups, cold drink containers, salad containers, cardboard food containers and in the case of one supplier – tin foil pie containers.
- Compostable packaging included plates, cutlery, hot drink containers and lids and cold drink containers and paper food containers.
- Recyclable packaging including salad containers and commercial cold drink bottles.
- Non recyclable packaging included milk jiggers, confectionary packaging as well as tin foil pie containers (in the context of the waste streams being recycled at the particular facility).

Commentary

- From our observations non recyclable non compostable items ended up in all three waste streams and we will review the data once available to assess extent of impact.
- If greater pre-Games testing of the combined catering-waste system had occurred it may have helped to iron out some of these food packaging waste challenges.

Back of house waste

Findings

- Back of house refers to all areas where 'customers' including athletes, officials and spectators are not able to go. The Commission reviewed back of house arrangements for waste disposal including food waste.
- All caterers were required to comply with the waste separation system however the OBS caterer decided not to comply.
- We have been advised there is less certainty over food quantities in event-based (as opposed to pre-planned) catering, with significant potential for wastage.
- We observed instances of food being dumped before its due date, including 5000 sandwiches at Royal Artillery Barracks and at the Olympic Park Village.
- Catering operations were a significant source of food waste contamination through food waste being placed in the wrong bins, or being cross-contaminated with other waste.



Foil pie container.



Compostable packaging.



Sandwiches being dumped.

Waste



Compostables bin.



Food packaging waste.



Scrim in general waste skip.

- At least one caterer donated packaged goods at the conclusion of the Games to a charity.

Commentary

- During the course of the Games we were made aware of concerns relating to excessive food waste in relation to catering operations for athletes dining at Eton Dorney and in relation to a workforce dining operation, operated by separate catering companies. The nature of the specific allegations relating to Eton Dorney (which were able to be investigated due to the evidence provided) and the outcomes of our assurance are covered on our website².
- LOCOG imposed challenging waste minimisation targets on caterers, and we believe that these are likely to have been met despite the incidences of food wastage observed, due to the stringent contractual conditions in place. However we have not directly verified this data.
- The Commission considered LOCOG's plans for redistributing unwanted food from catering venues and concessions before its due date to minimise food wastage through 'swap-shops'.
- We understand that the swap shops reduced incidents of food wastage while ensuring that food was able to be supplied consistently across venues.
- However, attempts to supply charities at short notice with unwanted food were unsuccessful, compounded by charities not accepting hot food.

Look and feel waste

Findings

- LOCOG appointed ICON to manage the decommissioning of 'look and feel' overlay materials and other materials used in overlay.
- Look and feel waste was collected as part of the bump-out included in the 77 day Games period whereas other overlay waste is counted as part of the transition target for 90% reuse and recycling of materials.
- Look and feel waste includes significant amounts of scrim, signage, flags and banners and hoardings which were designed to be able to be reused and recycled.

Commentary

- We saw and photographed several instances of scrim being placed into the residual waste stream rather than being taken away by ICON for reprocessing. LOCOG became aware of this issue early in the transition period between the Olympics and Paralympic Games and pursued the contractor to ensure ICON met its contractual conditions.
- We await the final waste figures to determine whether LOCOG has been able to meet its target of 70% of waste to be reused or recycled.

Waste

- We are unable to comment on other overlay waste as the full transition period falls outside the timeframe for this report.

Designing out waste – logistics

Findings

- We observed the logistical operations for supplying the villages, the venues and the non-competition venues with food, water, materials and commodities.
- LOCOG worked early with its partners to reduce waste arising from the logistics workstream. This included:
 - dematerialising packaging for commodities such as furniture;
 - hiring or leasing as much equipment as possible;
 - keeping all packaging material so that goods could be repacked after the Games for their onward journey.

Commentary

- The comprehensive approach taken by LOCOG and its partners sets a challenging benchmark for future Games.
- While we do not yet have access to the data, we expect that this will have positively impacted on waste arising from packaging and damaged goods, freight-related carbon and the hiring/leasing strategy.

Waste at non LOCOG Live Sites

Findings

- Live Sites were commissioned by a range of non LOCOG bodies including the GLA and local councils.
- Within London, four major Live Sites commissioned by the GLA were in operation at Hyde Park, Victoria Park, Trafalgar Square and Potters Field. These were assured by the Commission.
- The waste strategy for these sites included a commitment to zero waste to landfill although there were no specific recycling and reuse targets. This was to be delivered via single source collection and post separation and incineration.

Commentary

- The GLA was advised by the Live Site operator that a post-collection separation approach would be more effective than attempting source separation on-site given the levels of contamination that arise during waste disposal by spectators at events.
- This view is only able to be verified by comparing the source separation outcomes from the LOCOG strategy versus the GLA strategy and at this stage we are not in a position to comment on any data comparison between the GLA or LOCOG.
- LOCOG will have achieved some source separation for compostables whereas this will not be possible from the Live Sites waste stream.



Bales of waste for recycling.



Bins at Live Site.



Dog poo wormery.

Waste

Related Recommendations



**Waste and Resource
Management Review**
Recommendations 2, 9



**Sustainable Games
Preparation Review**
Recommendation 8

- The post-collection separation approach, while pragmatic, will not have influenced any spectator behaviour into greater awareness about waste separation and recycling.

Post-collection waste treatment

Findings

- The LOCOG waste contractor brought residual and compostable waste to its Barking Waste Transfer Station for manual inspection and picking before compostable waste was diverted to a sub-contractor for in-vessel composting, and residual waste was sent for incineration, or for treatment as recyclable waste.
- Recyclable waste was sent to the contractor's Barking Materials Recycling Facility where it was sorted into PET bottles, paper and card and residual waste.
- The waste contractor applied several additional manual inspections to the waste treatment process to improve waste segregation rates.
- Feedback from the waste contractor was also provided to venues to improve source separation practices.

Commentary

- Without the approach of the waste contractor to apply additional waste separation through manual inspection LOCOG and the waste contractor advised that waste segregation would have been lower than needed.
- The experience of the waste contractor and the way in which learnings from early in the period were incorporated into revised practices demonstrates that waste management for major events cannot be undertaken on a 'set and forget' basis. LOCOG has demonstrated the benefit of all parties working under a collaborative framework to achieve the best results.

Lessons for the future

The approach to waste taken by LOCOG represents a significant investment for the events industry and for future Olympic and Paralympic Games. Some lessons are already apparent from this innovative work:

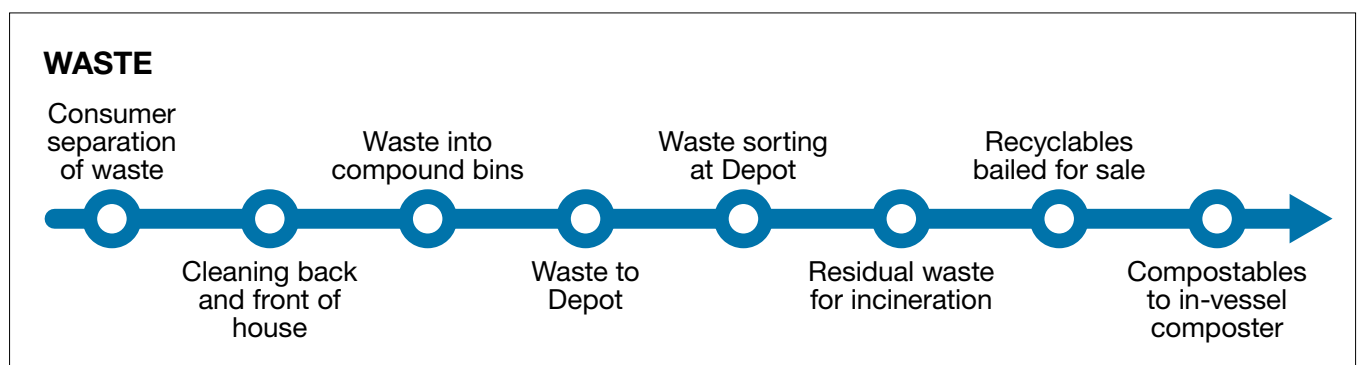
- LOCOG's integration of waste, materials, food and packaging policies demonstrates the benefits that can be gained by a systems-based approach. The stronger the design and systems connection between these policies, the greater the likelihood of minimising residual waste.
- Spectator behaviour is heavily influenced by their own experience, that of their peers and by the apparent ease of waste disposal. In future, eradicating food packaging which requires recycling or which is residual waste could greatly reduce any confusion amongst spectators about what goes in which bin. Further, the active involvement of volunteers in assisting spectators in using the bins would have also helped to reinforce behaviour change messaging.
- Despite optimal or near optimal design, the act of source separation

Waste

across three streams remains a constant challenge for spectators and for caterers. If such an approach is adopted again it will require a systematic and well-resourced approach to training, retraining and to micro incentives and sanctions to drive appropriate behaviour. This investment will need to be balanced against the size of the event and associated costs.

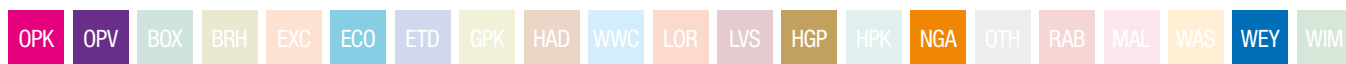
- The experience of the waste-related contractors suggests that removing landfilling as an option was a powerful incentive to actively find new supply chains for reusable product which had no active chain within the UK – for example carpet and temporary flooring. The system of incentives in place for the waste contract and early engagement with waste and materials contractors appears to have driven this highly motivated approach which in turn has resulted in a wider impact on industry.
- Consideration of the carbon emissions accrued or avoided – and the other co-benefits from a zero to landfill approach to waste would greatly enhance the business case. It would be important to consider for example the benefit of composting food waste versus incinerating it or landfilling it (and its associated methane emissions), while the value of energy produced from incineration versus high grade compost (or for example anaerobic digestion) is a powerful example of the complex decisions required which have knock-on effects in addressing resources sustainably.
- Quantities of unwanted food are an inevitable by-product of hosting large events. Given the time, security and uncertainty challenges inherent in a Games-time food operation, it would be advisable for future Games hosts to negotiate in advance with charities a joint mechanism that is able to cope with rapid distribution of unwanted food at short notice and thereby further avoid food being wasted.

Stages of the process

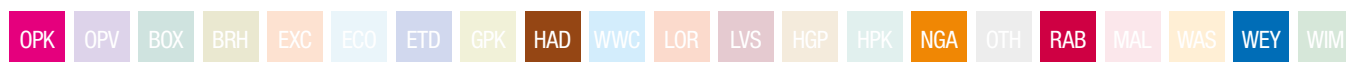


Energy

Venues assured under this theme – Games-time:

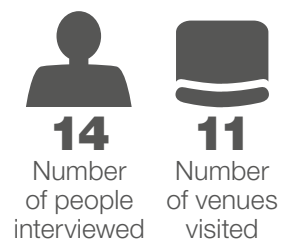


Venues assured under this theme – Test Events:



Level of confidence:

We are confident that LOCOG met its energy conservation target.



35 gWh
Projected energy use

London 2012 Targets and Commitments

- 1 20% of Games-time energy on Olympic Park to be met through local renewable sources (superceded).
- 2 20% reduction in carbon emissions to be met through reducing Games-time energy use

Definition

This assurance focused on LOCOG and its partners' reduction of energy consumed during the Games including electricity, gas and fuel for generators and vehicles. The total energy consumption was estimated by LOCOG as 35 million kWh or 35 gWh. This is equivalent to the annual domestic consumption of Chelmsford³.

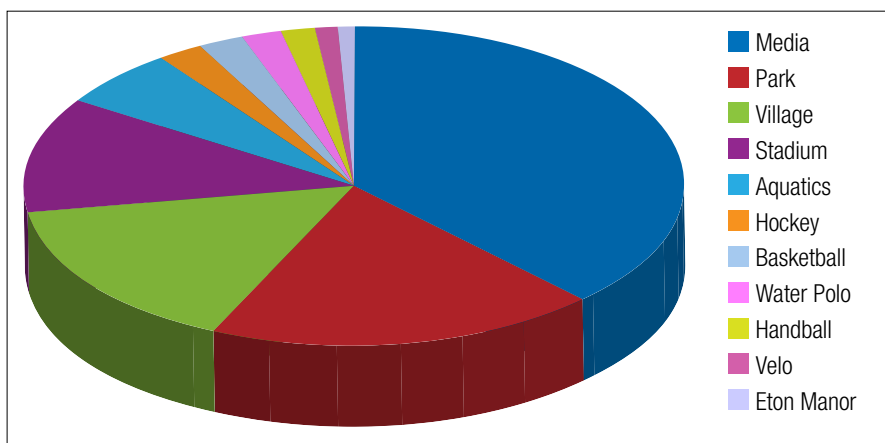


Figure 1: Projected energy consumption by venue in Olympic Park

The areas we aimed to cover included:

- Overall operational energy management
- Engagement of venue energy teams with the energy plan
- Collection and use of energy data
- Effective and safe deployment of temporary generation

Findings and Commentary

Findings

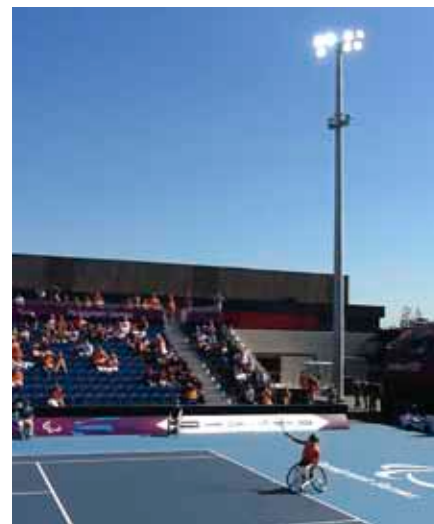
- Energy managers were deployed across venues. A contract manager responsible for BP and EDF contracts was appointed shortly before the Games, reporting to the finance team, who made a significant contribution to energy conservation.

Energy

- Data was collected on a “Day +1” basis for all energy sources with limited deployment of real time electricity data. Energy data for selected venues was available in the public domain at <http://www.edfpowerthegameslive.com/>
- Energy consumption was reviewed daily and action plans were developed to deal with any discrepancies from the plan or possible excessive consumption patterns. Actions were deployed through venue energy managers and supported by LOCOG sustainability team.

Commentary

- During 2011 we expressed concern at the absence of an energy conservation plan. In our report published February 2012 we recommended **“That LOCOG produce an energy management and conservation plan demonstrating how it will reduce carbon emissions by at least the amount that would have been avoided through the renewable energy target, in sufficient time for its recommendations to be implemented”**. A satisfactory plan was finalised in May 2012. We were confident that the 20% target should be achievable as approximately 15% of the savings were achieved through design and technical solutions leaving only 5% to be saved in operation. Had the energy plan been developed earlier, more ambitious targets could have been set.
- We are confident that this target will be achieved and probably significantly exceeded.
- While LOCOG did not appoint a centralised energy team, the work of the sustainability team, the BP/EDF contract manager and the manager of energy supply resulted in an effective approach which should pay back many times in financial savings assuming the 5% target is achieved. It could have been much more cost effective if resources had been deployed earlier. This is evidenced by interviews with the team and our own observations:
 - The application of the energy plan was not consistent, 40% of venues we saw were not fully implementing the plan
 - We observed visible wastage of energy at 80% of the venues we visited, generally lights on during the day or vehicles idling when stationary.
- OBS is a major energy consumer and took no part in conservation activities despite LOCOG’s efforts to engage them.
- Gross over estimates of energy consumption, particularly from OBS, led to unnecessary deployment of generators. This was only partly resolved during the Games as energy managers identified excessive generator capacity at the stadium, Eton Dorney, Hadleigh Park and Weymouth and Portland through daily reviews of data. More accurate estimates would have led to generators not being hired in the first place.
- LOCOG was successful in challenging some of the requirements from International Federations, broadcasters and the IOC,



Lighting required by broadcaster despite clear blue skies.



Generators with diesel particulate filters.



Lighting on during the day.

Energy

Related Recommendations



**Sustainable Games
Preparation Review**
Recommendation 4

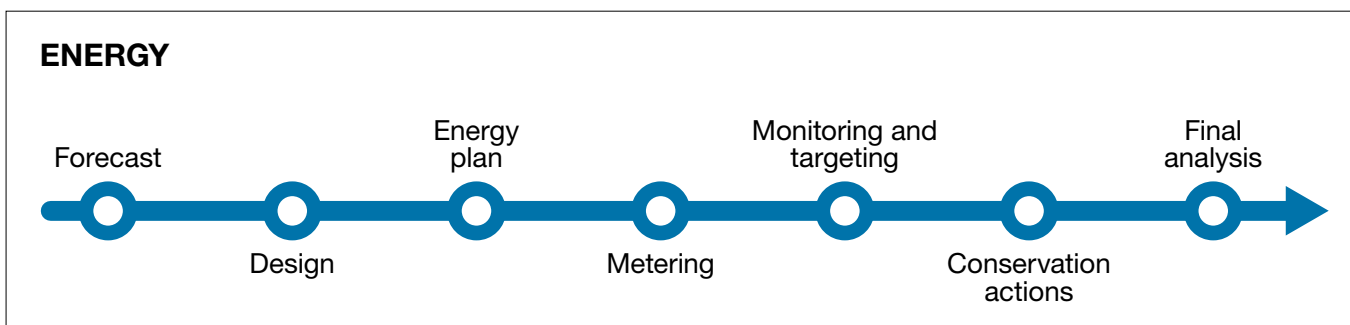
particularly with regard to field of play lighting, resulting in significant benefits.

- There was minimal use of alternative fuels, a very small percentage of bio-diesel was deployed as a pilot but more than 90% of the energy was supplied from fossil fuel sources.
- The iconic cauldron was a demonstration to the world that it is possible to design features such as this with a fraction of the energy consumption in use and the embodied energy in production.

Lessons for the future

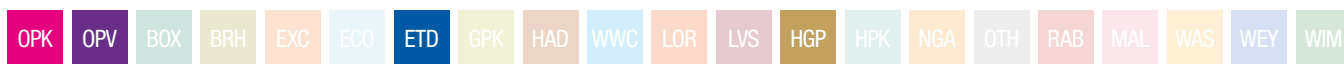
- The LOCOG data made available through energy monitoring will establish an effective baseline for the first time for an Olympic and Paralympic Games.
- Future Games organisers could effectively build on this legacy through the following measures:
 - Develop an energy conservation plan in parallel with Games planning.
 - Deploy the energy management team in sufficient time for them to understand venues and build a relationship with venue managers.
 - Ensure commitment of broadcasters to actively engage in energy conservation.
 - Embed energy conservation objectives in venue managers personal objectives.
 - Use LOCOG data as a starting point for planning future Games.

Stages of the process



Logistics

Venues assured under this theme – Games-time:



Venues assured under this theme – Test Events:



Level of confidence:

We are confident that LOCOG has or will meet its logistics related targets.

London 2012 Targets and Commitments

- 1 100% of LOCOG Logistics managed goods to be delivered to Games venues by more sustainable modes or methods such as water, non-idling policy, night time deliveries, telematics and electric vehicles⁴.
- 2 Reduce LOCOG owned carbon emissions and minimise our carbon footprint.
- 3 100% of Fixtures Fittings & Equipment (FF&E) to be sourced in accordance with the LOCOG Sustainable Sourcing Code. The hierarchy to sustainably utilise assets is: reduce scope, hire assets, lease assets then lastly buy assets.
- 4 100% timber derived FF&E holds FSC certification.
- 5 Reduce the quantity of assets and packaging to the minimum required.
- 6 Reuse or recycle at least 90% of LOCOG owned assets and any packaging handled.

Definition

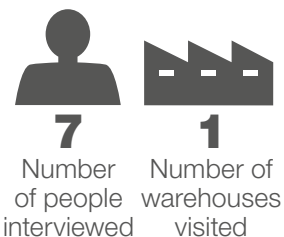
The focus of this theme was the measures taken to deliver the logistics sustainability strategy, including around carbon, waste and environmentally sensitive materials. The logistics function for LOCOG was responsible for managing the supply, delivery and pick-up of all furniture and commodities at every LOCOG venue. The scale of the operation is immense.

Findings and commentary

More sustainable modes of freight journeys

Findings

- We saw evidence of the freight telematics system in use, and biodiesel trucks as well two types of electric vehicle used on the Park. In addition, we were briefed on the two water barge trials LOCOG have managed.
- We were told of the ways in which LOCOG has planned freight journeys from factory gate to ultimate end-user, avoiding unnecessary handling in warehouses, or double freighting (i.e. from a venue back to a warehouse and then from a warehouse to the end point). For example, Ramler furniture, in addition to being on-sold to Glasgow, will have spent less than 200 miles in transit via road-freight and several thousand miles being shipped.
- We were told that electric vehicles on the Park became an increasingly popular choice for distributing small parcels and



1 Number of Olympic Villages visited

3 Number of logistics compounds visited

2 Number of Games warehouses

30-40% Proportion of London 2012 furniture sold to Glasgow Games

350 Number of shipping containers used to supply Glasgow 2014 with furniture from London Games

Logistics



Beds in the Olympic Village.



Logistics electric vehicle.



Moving materials by barge.

material around the Village because they could be used at night due to the lack of engine noise, providing a safer and less congested time to operate.

- LOCOG also advised of ways in which freight vehicles were used in 'reverse-logistics' where vehicles which would otherwise be empty are used to carry others' freight back towards base.

Commentary

- LOCOG staff were extremely engaged with the strategy to find the most sustainable means of freighting material.
- We were impressed by examples given of reducing the amount of road miles for commodities, and the obvious planning that gone into all freight journeys to find the most sustainable means possible.

Reducing waste through packaging and furniture design

Findings

- We were told that LOCOG had instituted a number of measures to design out and to reduce waste in packaging for furniture and fittings and to reduce the amount required.
- This included visiting factories commissioned to produce furniture to review packaging arrangements from factory to warehouse, storing all packaging so that furniture could be re-packed into packaging post-Games, considering the materials used in packaging.
- A fix and mend service was established which helped to reduce wastage and overall numbers of furniture and fittings required.
- Every item was logged ensuring it was able to be tracked which reduced wastage through loss or stolen items.

Commentary

- We were generally impressed with the commitment shown by the team to driving down wastage within furniture and fittings and in packaging.
- The early engagement and long-term planning required to implement these dematerialisation strategies are impressive and will have made a substantial impact on waste and carbon emissions.

Trialling taking freight by barge

Findings

- LOCOG undertook to trial the freighting of material by barge and to make this available to the wider industry.
- We were advised that two limited trials of barging material were undertaken under different operating conditions from Tilbury to docks at Tower Hamlets. LOCOG is analysing the data to assess the business case under different operational conditions and will make these available via a learning legacy paper.

Commentary

- The information resulting from the barge trials will provide much needed baseline information for industry to benchmark their own

Logistics

operations and to assess whether water-based transport is viable financially and logistically.

- We commend LOCOG for undertaking these trials and committing to contributing to wider learning legacy for the freight industry.

Lessons for the future

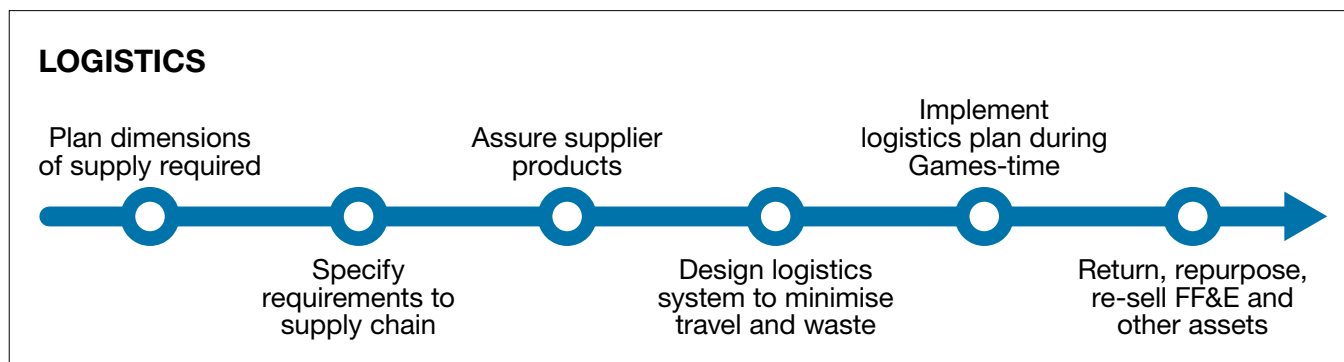
- The London 2012 logistics experience appears to have been very comprehensive and is likely to have resulted in significant savings in avoided waste, carbon emissions, materials, as well as providing a series of benefits to the wider industry.
- The challenge will be to share these learnings as widely as possible, including providing as much data as possible to enable others to incorporate it into business cases, making for sustainable logistics operations.
- While, within LOCOG, many procurement and hiring decisions did not fall under the logistics' team remit, we believe that future games organisers will need to take a global view on decisions related to the sourcing, transporting and disposing of equipment, fixtures and fittings, merchandise and materials to ensure that optimum sustainability outcomes are achieved.
- Working with the supply chain for major elements to encourage the hire/lease market to provide what is needed to the right specification will be important for future games.

Relevant Recommendations



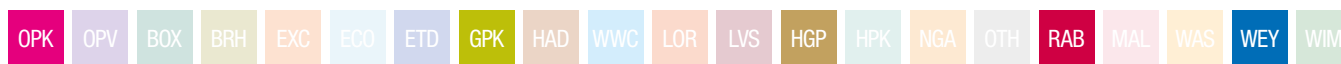
**Waste and Resource
Management Review
Recommendations 8**

Stages of the process



Environmentally sensitive materials

Venues assured under this theme – Games-time:

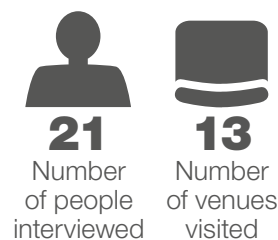


Venues assured under this theme – Test Events:



Level of confidence:

We are confident that LOCOG has met its commitments with respect to timber and to tracking the use of PVC. We are cautiously optimistic that LOCOG has tracked the use of HFCs.



90%+

Percentage of all permanent HVAC from non-HFC sources

100%

of all temporary HVAC observed used HFC

100%

of Coca Cola fridges observed used non-HFC

100%

of catering refrigerated storage used HFC

30+

Number of locations where HVAC and refrigeration observed

London 2012 Targets and Commitments

- 1 100% FSC certified timber and timber products.
- 2 HFCs must not be used where other safe, technically feasible, cost effective, energy efficient and more environmentally acceptable alternatives exist.
- 1 Work with the hire market to identify appropriate materials or products meeting as many of the conditions of the London 2012 Policy on the use of PVC as possible.

Definition

The Commission made recommendations about environmentally sensitive materials in several reviews and contributed to London 2012 developing policies on the use of HFC and PVC, and in addition the cooling system for the Aquatic Centre being changed from using HFC to ammonia. The move away from HFC gases was recommended on the basis of their very high Global Warming Potential (GWP), with alternatives having low or no GWP.

The Commission's Games-time assurance focussed primarily on HFC use in HVAC, fridges and cold stores and on how the PVC policy had been applied to sponsor showcases and the role of logistics with regard to ensuring timber products were FSC certified. Our assurance of the processes regarding PVC and FSC in temporary venues was primarily carried out prior to the Games.

Findings and Commentary

Findings

- As a result of our previous recommendations LOCOG had developed a data assurance processes for environmentally sensitive materials in venues and infrastructure.
- While we were onsite we were unable to verify that there was any active tracking or on-site assurance processes for HFC use in catering fridges and cold stores, other than Coca Cola ensuring that all its equipment was HFC-free.
- We have been advised by LOCOG that it has now completed its HFC inventory and can account for all HFC based coolant used by caterers and contractors during the Games.
- During the Games we observed and recorded refrigerant gas

Environmentally sensitive materials

being used in hired air conditioning units, fridges and cold stores at a number of temporary venues, although we did not check domestic-style fridges in temporary offices. The refrigerants were all HFC with the exception of fridges provided by Coca Cola which used alternative refrigerants, for example carbon dioxide which has a GWP of 1.

- We mainly observed the following HFC gases being used:
 - R404a (GWP of 5588)
 - R134a (GWP of 3300)
 - R410a (GWP of 2088)
- LOCOG has subsequently advised that all of the domestic-style fridges it procured for temporary offices were HFC-free.
- We observed some innovation with respect to finding alternative cooling methods in several sponsor showcases to minimise the need for air conditioning, with several showcases not using air conditioning and thus avoiding the use of HFC.
- One sponsor had used an alternative material to PVC and several others stated that they had ensured that where they had needed to use PVC it was phthalate free, to comply with the London 2012 policy on use of PVC.
- The LOCOG logistics team has been tracking FSC documentation and certification for all timber products procured through its processes, including all furniture, fixtures and equipment (FFE).
- The only circumstances where Logistics had not been able to track documentation were where there had been last minute purchases by individual functional areas and products were sourced quickly from within the UK. This is expected to be less than 10% of the total FFE procured.
- Some challenges were encountered where a supplier was unable to provide the full chain of custody and in these cases alternative products were chosen without timber, or where the full chain of custody was in place. LOCOG also made visits to Chinese and Malaysian factories to check up on the chain of custody.

Commentary

- LOCOG's use of on-site verification of HFCs against its tracking system appeared to not be in operation during Games-time, however we have now been advised that LOCOG has fully accounted for all HFC-based hired coolant units.
- We are disappointed that all the temporary air conditioning systems used by caterers and contractors other than Coca Cola's that we inspected were using HFC given the length of time LOCOG had to achieve a more sustainable outcome.
- However, we are aware that this issue is at least in part due to the lack of availability of these types of coolant units within the hire market.



HFC based cooling.



R134a.



Tents, cabins and temporary stands at Lee Valley White Water Course.

Environmentally sensitive materials

Relevant Recommendations



2008 Annual Report
Recommendation 3



2009 Annual Report
Recommendation 3



Biodiversity Review
Recommendation 7



**Sustainable Games
Preparation Review**
Recommendation 2

- PVC was widely in use for the array of tents and marquees hired in by LOCOG to form the back of house facilities for venues.
- We were pleased to be able to see evidence of tracking and assurance processes set up by the LOCOG Sustainable Venues advisors and by the Logistics Functional Area in relation to FSC timber. This has given us a high degree of confidence that timber products procured via logistics were FSC certified as per the commitment.
- We are unable to provide assurance over the remaining less than 10% of items where Functional Areas have made last minute purchases of timber products.
- We commend the efforts made by some sponsor showcases to use alternatives to HVAC systems and alternatives to PVC but were disappointed with some aspects. For example, the showcase that featured an innovative looking cooling system but also installed air conditioning so that the sponsor ended up requiring energy to power both cooling systems.

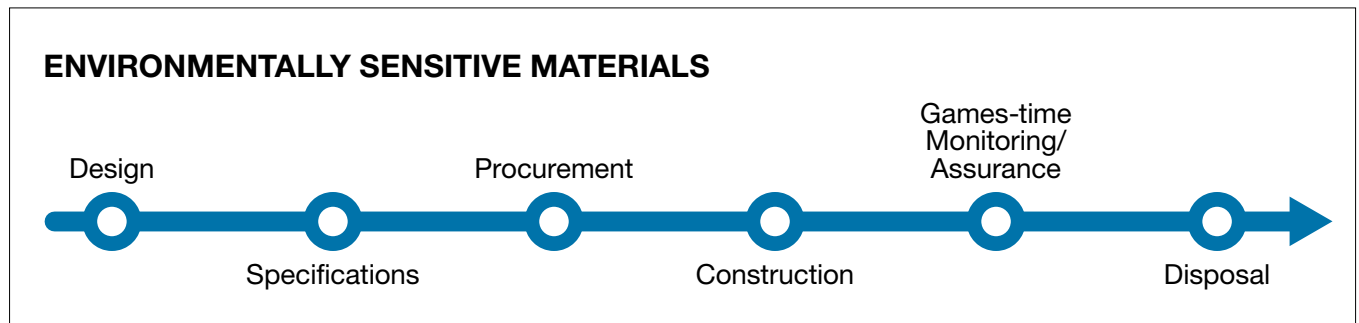
Lessons learnt

- LOCOG has, for the first time, put in place a comprehensive tracking system for environmentally sensitive materials. While there are a number of areas where this process could have worked better, it will be critical for future event organisers to learn from this approach so that the hire industry, event designers and technology providers can better meet the cooling related needs of major events. Specifically, we believe the following are important:
 - The HVAC and refrigerant industry must consider its preparedness to supply non HFC based cooling (whether this is refrigerant or evaporative cooling based) for major events.
 - Early engagement with the hire industries is necessary so that new standards and requirements for environmentally sensitive materials can be specified in sufficient time to influence the supply chain.
 - For space cooling, early and holistic design based approaches should drive design innovation, natural ventilation as well as alternative technologies such as evaporative cooling, to minimise any need for HFC solutions in temporary buildings.
 - Early planning and engagement with contractors is important to understand the likely uses of environmentally sensitive materials and to put tracking and assurance systems in place to ensure that policies and standards are implemented, including doing name plate checking of equipment installed on site.
 - These tracking systems need to be able to take into account of late changes to proposed systems and last minute purchases to prevent these potentially undermining effective work done earlier in the programme.

Environmentally sensitive materials

- Establishing a full chain of custody and putting in place appropriate assurance processes for sustainability timber and timber products can be a resource intensive process but it is essential to ensure that all timber is certified as sustainable.
- Wherever possible this should be integrated into other documentation control and assurance processes to minimise the resources needed.

Stages of the process

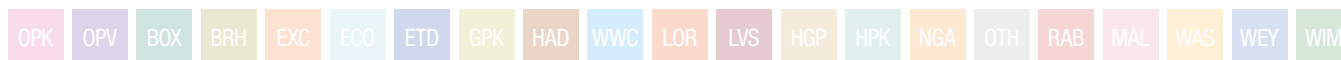


Look and feel/public perceptions (Materials used)

Venues assured under this theme – Games-time:



Venues assured under this theme – Test Events:



Level of confidence:

Not applicable



9

Number of people interviewed



16

Number of venues at which Look was observed

100km

of fencing wrapped

180,000sqm

of fence wrapping

3,500

banners and flags

London 2012 Targets and Commitments

No specific target or commitment

Linked commitments (see waste and materials)

Definition

London 2012 promised that the Games would “inspire a generation”. During the Olympic and Paralympic Games we have been looking at what this means for sustainability.

This includes what LOCOG call “look and feel”, which covers everything from signage and way finding to all the banners throughout London and the messages that these are used to convey.

Findings and Commentary

Findings

- The quantities of materials used to create the Look and Feel of the Games are quite substantial:
 - The 100km of fence scrim (the material used to wrap a fence with) used is enough to wrap a fence running all the way from the Olympic Park to the Channel Tunnel.
 - This material is also enough to cover an area of 180,000 square metres – or approximately the size of Green Park in Central London.
 - 3,500 flags were used to display logos and messages around London and Olympic and Paralympic venues.
- Whilst there had to be some materials (such as banners and fence scrim) removed and replaced between the Games to change the branding from Olympic to Paralympic, only about one third of it was changed instead of a wholesale change as with previous Games. This was achieved through the swapping out of Olympic logos and replacing them with Paralympic logos, as opposed to a complete change.
- As with other materials used for the Games, attention has been paid to what the materials are made from and what will happen to them post-Games:
 - LOCOG worked with their supplier to source alternatives to PVC, such as LDPE banners, and specified that the supplier was required to take everything back and reuse or recycle it.
 - In some cases, the material used was specifically changed to ensure the banners and signs were more recyclable.
 - One significant example was using corex polypropylene instead of

Look and feel/public perceptions (Materials used)

foamex for hard signs and banners. Here the material can all be recycled, instead of having a sticky foam layer in the middle of the material making recycling extremely difficult or impossible.

- Plans for reuse include:
 - A licensee who will auction memorabilia
 - Donations that will be made to schools in the Get Set network
 - A small number of items that will be sent to the IOC and IPC for their museums.
- Plans were set up to ensure remaining materials would be recycled. Further information on the recycling of Look materials can be found in the waste section of this report.

Commentary

- LOCOG kept the amount of materials required for look and feel to a minimum by adopting the mantra “communicate, not decorate”. This meant “look” was only placed where LOCOG needed people to look, or where LOCOG needed to communicate a message, such as for way-finding.
- Traditionally there has been a wholesale change of Look materials in-between Games. In London LOCOG succeeded in getting both international committees (IOC and IPC) to agree to their respective logos being displayed side by side in locations around the city, with only wholesale changes occurring in the Last Mile around venues. The Commission would like to see this integration continue for future Games so wholesale changes become a thing of the past.
- The use of alternative materials and a careful approach to reducing quantities required for the “look” meant that the environmental impact was considerably less than it would have been had the materials standard to the events industry been used. Nevertheless, LOCOG did not set out to advertise its “look” as inherently sustainable.
- Various features of the Olympic Park, including the biodiverse areas, do convey a message around the sustainability of the Park. However, as discussed in the communications section of this report, initiatives like the “Walk in the Park” failed to convey the messages to the general spectator audience, as there was nothing on the Park communicating the messages that VIPs doing the Walk in the Park would have heard.
- Prior to the Games we were advised that the phone box exhibits would have before and after shots of the remediation of the Park. This did not happen and in our engagement with spectators we were frequently told it would have been good if before and after information had been available.
- There are also several unsung buildings on the Olympic Park – those that contribute a significant amount to the sustainability of the programme without necessarily being as well noticed. Examples are the blackwater treatment plant that takes effluent from the sewer and turns it into non potable water, and the energy centre with its Combined Heating, Cooling and Power (CHCP) plant.



Look and Feel of the Games.



Phone box feature on the Olympic Park



Planting on the Olympic Park.

Look and feel/public perceptions (Materials used)

Related Recommendations



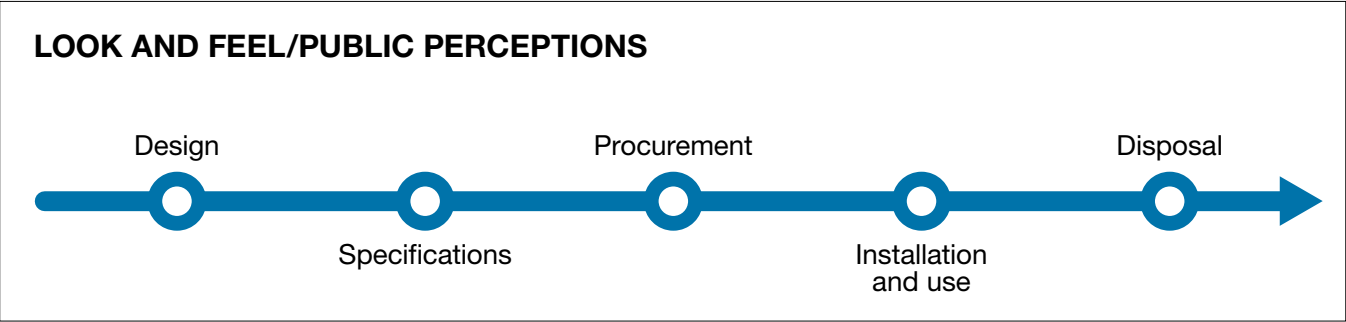
Waste and Resource
Management Review
Recommendation 9

- It has been argued that there is a positive message here – that sustainability can be embedded without it necessarily having to be an obvious feature. Of the spectators we spoke to, only some were able to identify anything specific that they had learnt about sustainability through being on the Olympic Park.
- Future events will need to consider the potential for further innovation in both making the materials more sustainable and using the look and feel to communicate sustainability messages alongside being used for purposes such as way-finding, as this seemed to be a missed opportunity at London 2012.

Lessons learnt

- LOCOG succeeded in getting both of the international committees (IOC and IPC) to agree to their respective logos being displayed side by side in locations around the city, with only wholesale changes occurring in the Last Mile around venues. The Commission would like to see this integration continue for future Games so wholesale changes become a thing of the past.

Stages of the process



Transport and accessibility

Venues assured under this theme – Games-time:



Venues assured under this theme – Test Events:



Level of confidence:

We are confident that London 2012 met its overarching public transport target.

We are cautiously optimistic that London 2012 has achieved its commitment to encourage and facilitate walking and cycling during the Games.

London 2012 Targets and Commitments

- 1 100% of spectators to attend the Games using Public Transport (except where they hold a blue badge parking permit).
- 2 Provide a Games-time Mobility Service.
- 3 Active Spectator Programme to encourage and facilitate walking and cycling during the Games.
- 4 London 2012 will work with transport delivery partners to create a new network, promoted using a map highlighting the accessible elements of mainstream transport services such as local buses, light and heavy rail, Underground services and other modes such as Dial-a-Ride.

Definition

This section covers the way people of all abilities get to and from the Games and get around when they get there. London 2012 was promised to be “everyone’s Games” so this section is critical to the success of the Games sustainability programme. It was also promised to be the world’s first “public transport Games” with no car parking for spectators other than disabled parking.

We were accompanied by LOCOG staff during our observations at venues but were unaccompanied for some of the Last Mile observations. We conducted two observation sessions of London’s transport system, testing journeys to all venues at the busiest times during the Olympics and Paralympics. In addition we sampled walking routes and cycle routes to and from the Olympic Park and other venues.

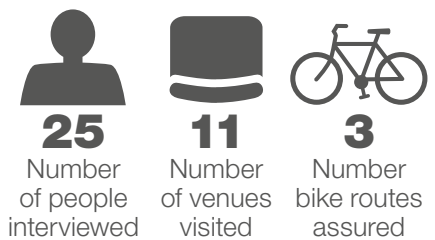
The areas we aimed to cover included:

- Effectiveness of the public transport system for all abilities at all times.
- Access for disabled people at venues.
- Equipment and facilities for disabled people.
- Venue design for accessibility.
- Facilities for assistance dogs.

Findings and Commentary

Findings

- The London 2012 transport plan and accessibility measures were implemented by LOCOG, TfL and by the ODA.



7
Number of bike parks assured

350
Number of trips by public transport taken by team during Games-time

6
Bus and accessible minibus operations observed/assured

Transport and accessibility



Park and Ride service.



Cycles chained next to sign to cycle parking.



Secure cycle parking.

- The transport plan included a comprehensive set of measures to reroute, retime and remode background demand in London, while enabling spectators to get to their events easily and efficiently by public transport, walking and cycling.
- Strategies adopted to support these objectives included physical upgrades to stations, walking and cycling routes and signage, comprehensive publicity campaigns, the extensive deployment of volunteers (called travel ambassadors), temporary redesign of some station access and egress to avoid congestion hotspots, provision of information online via the london 2012 website and via TfL's own 'Get Ahead of The Games' website, provision of hard copy walking and cycling maps at train stations, and the provision of mobility and accessibility services.

Commentary

Demand management on the transport system

- TfL ran an extensive campaign called 'Get Ahead of the Games' which promoted walking and cycling and alternatives to typical public transport routes for commuters in London. This package of measures including a website, public advertising and public address messages had a significant impact on overall travel demand on the public transport network and on road traffic.

Accessible design

- All venues were designed to meet or exceed the appropriate accessible design best practice for the type of building constructed. This was overseen by an independent design and access panel. It is an example of best practice in this area.
- Venue overlay and temporary venues were designed for accessibility. We found no significant concerns with respect to accessibility issues in temporary venue design or overlay.

Travel information

- We randomly selected 123 post codes in London to test the travel information for each of the major venues for a variety of journey types by public transport. In all cases the system recognised the post code and provided the information required.
- We were not able to test the walking information as comprehensively due to the late availability of this service.

Walking and cycling

- The 'Get Ahead of the Games' campaign was a significant general contributor to promoting general messages about walking and cycling to Londoners during the Games period.
- The Travel Ambassadors provided a well-resourced presence at stations, championing walking and cycling and providing general directions to spectators and commuters alike.
- Secure cycle parking was available at all venues with free cycle servicing and repairs at larger venues. We understand that Transport for London has received very positive feedback from those who used this service.

Transport and accessibility

- This Games was the first to put together a comprehensive package of measures to promote walking and cycling and TfL and LOCOG should be commended for this. However, there were a number of areas which could have been improved.
- Information for cyclist spectators was available on the London 2012 website but online information concerning walking routes was directly available only a short while before the Games. The Commission had raised the issue during pre-Games assurance.
- Hard-copy information on walking and cycling was available for some time prior to the Games including maps which were handed out at underground stations and contained information about walking and cycling, but online information did not match this strategy.
- Our observations found the cycle parking to be well used in a few locations (Lee Valley White Water Centre, Hadleigh Farm) but very limited in others (including the Olympic Park, Victoria Park, Hyde Park). Discussions with people responsible for the secure cycle parking also reported it to be used less than had been expected, although we have been advised that uptake slowly increased over the course of the Games. Sign posting to cycle parking was designed to be supplementary to the London 2012 journey planner. We found signage to be poor or non-existent. We experienced numerous complaints about this issue which was corroborated by our own experience. However, we are also aware that there was significant fly-parking of bikes, in some cases, right next to cycle parking signage which suggests that some cyclists may have preferred to avoid secure parking stations in order to get as close as possible to venues.
- The main walking route was along the Greenway from West Ham station, advised as a 23 minute walk. This was billed as “the fastest way to central London” from the Park.
- There was no mobility assistance at West Ham, and whilst toilets and drinking water were available on the route there was no seating, shade or shelter.

Public transport

- The public transport provision was a great success with no substantial capacity issues.
- Ticket holders were provided with a free travel card valid for the day of their event and information about public transport was available online, easy to access and understand.
- Transport volunteers were provided at all routes. These were mostly TfL staff who were well informed and knew how to access relevant information.
- We have had reports of exceptional service from transport volunteers. The Olympic Javelin service was of particular note, with ample capacity and very accessible to wheelchair users.
- The addition of the cable car service in time for the Games was beneficial, providing a useful fast link between the Excel Centre and the North Greenwich Arena.



Secure cycle parking.



Cable car.



The Javelin high speed train.

Transport and accessibility



Accessible shuttle bus.



Games Mobility Service.



Mobility scooters.

Last Mile

- Accessibility in the Last Mile was in the main very good. Signage was clear and there were plenty of volunteers to assist.
- Most venues had insufficient provision for people to sit and there was little or no shelter or shade provided.
- The Last Mile is covered further in a separate section of this report.

Accessibility and Games venue operation

- Disabled people were allowed to apply for sporting tickets before they went on general release and were encouraged to phone a special advice line to ensure that their specific needs were taken into account. This worked well for the majority.
- It was not possible to use this line to book tickets for a mixture of disabled and non-disabled people, in addition to the free companion seat that was offered.
- There were comments in the media about excessive call costs but these only applied to a limited number of mobile operators.
- This was the first Games to have a comprehensive mobility strategy. Effective mobility assistance was available at all venues we observed.
- A range of mobility related equipment was freely available. Equipment made available by LOCOG included the following:

Vehicle	Olympics	Paralympics
Electric scooters	337	303
Power chairs	22	22
Manual wheelchairs	573	454
Golf Buggies	74	56

- Where numbers are lower for the Paralympics, this is due to the smaller number of venues being used.
- Access to audio commentary for blind and visually impaired people was difficult to find, volunteers were not well informed about this service and we experienced one example of faulty equipment.
- Facilities for assistance dogs were inconsistent and not all mobility volunteers knew where to find dog spending areas or water. There were also some examples of seat allocations with insufficient space for assistance dogs.
- The Visa ATMs at venues did not have the software installed to enable audio capability.
- All venues were fully accessible to wheelchair users which is a credit to good venue design.
- Information about charging facilities for power chairs was patchy but facilities were available.
- The Olympic Park required a lot of walking and there was insufficient facility for people to rest or take shelter or shade. A buggy service was available but there was little or no seating for people waiting for the service and the hubs were not close to toilets or fresh water points.

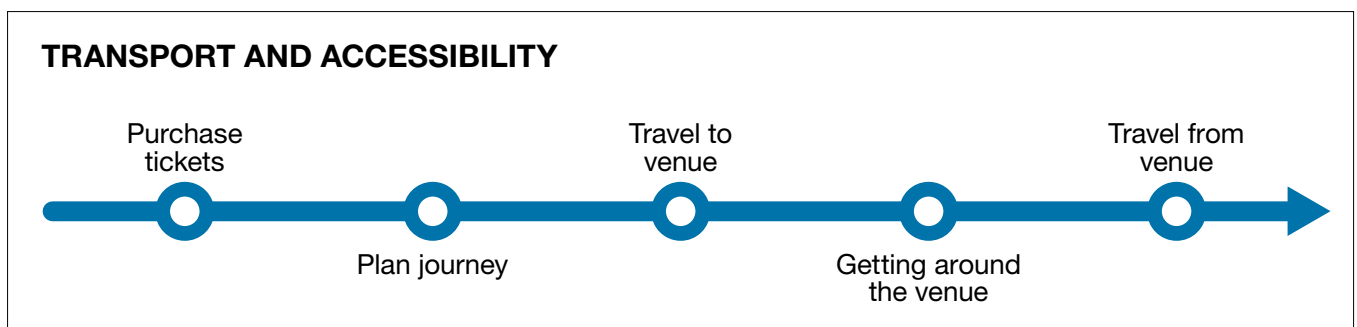
Transport and accessibility

- The buggy service had to be suspended at times for health and safety reasons when large numbers of people were moving around the Park, such as on egress from the stadium.

Lessons for the future

- Adopt ODA venue design and LOCOG mobility strategies as an example of best practice.
- Ensure adequate rest areas, shelter and shade for people with limited mobility.
- Ensure mobility services include provision for all disabilities, particularly blind and deaf people.

Stages of the process



Last mile

Venues assured under this theme – Games-time:



Venues assured under this theme – Test Events:



Level of confidence:

We are confident that London 2012 made the last mile journey accessible, clearly signed, and well supported through waste services and volunteers.



10

Number of people interviewed



14

Number of venues visited



5

Number of different bins systems observed

6-7

Typical number of coordinating organisations

London 2012 Targets and Commitments

No specific targets or commitments

Linked commitments (waste, food, accessibility & transport)

Definition

The Last Mile is the term given to the last part of a spectator's journey from a transport hub (tube or rail station / bus stop / Park and Ride site etc.) to the Games venue. Examples of this include the route from Cheshunt station to the Lee Valley White Water Centre, or the route through the Westfield shopping centre from Stratford Regional and Stratford International stations to the Olympic Park.

'Last Mile' arrangements are complex due to the number of different organisations involved at different venues. The coordination of these organisations was a critical factor in the successful running of these areas. The Commission made three key recommendations in this regard, where we believed more needed to be done to ensure there was a coordinated approach to the wide range of sustainability issues in the Last Mile, and in addressing waste management in particular.

Findings and Commentary

Findings

Staff and volunteer presence

- All of the venues we visited during the Games had a strong staff and volunteer presence to aid the passage of spectators from the transport hub to the venue.
- The integration of people from different organisations and of paid staff and volunteers made for an apparently seamless operation.
- Some of the temporary staff brought in for the Games, for example those placed at stations, seemed to be insufficiently informed about the area they were working in but this was partly remedied by the links up with other staff and volunteers in the area.

Signage

- Effective way finding for spectators was also helped by good signage to venues from stations.

Waste management

- Waste management in the Last Mile varied from venue to venue.

Last mile

- In some places, such as the route through the Westfield shopping centre from the Stratford stations to the Olympic Park, the London 2012 multiple bin system was in place alongside normal bins.
- At other venues and around the road race routes there were either the normal street bins or no bin provision at all.
- Despite this, there was minimal littering in evidence, either through people respecting the area and taking any litter with them or through effective street cleansing operations, or a combination of the two.

Accessibility

- Measures to make the Last Mile accessible were in evidence at venues. The Games Makers were keen to assist wherever needed and a number of physical measures were introduced for the Games. These included:
 - Accessible shuttle buses from stations to venues at places such as Eton Dorney and the Lee Valley White Water Centre.
 - Shuttle bus drop off points integrated with Venue Spectator Mobility Services for a seamless transition.
 - Park and Ride buses having low floors and fold down ramps
 - New ramps and bridges being built to manage people flows in busy locations.
 - Trackway being used to create level surfaces for wheelchair users and people with other mobility needs.
- There were reports of the lifts at Stratford station becoming overloaded at times, which may have been part of general congestion at a heavily used venue.
- Efforts to divert some of the spectators to West Ham resulted in some people not realising the extent of the walk involved which had implications for people with restricted mobility. During the Paralympics these efforts were accompanied by advice to spectators that this route was not suitable for people with mobility difficulties.
- Many Last Mile routes also lacked any seating provision to enable people to rest on the walk if needed.

Commentary

Coordination

- The Commission expressed concern and made recommendations prior to the Games about the need for greater coordination in the Last Mile.
- We were pleased to see evidence of action in this area through the coordinated approach to people management from transport hubs to venues and back.

Waste management

- Coordination of waste management in Last Mile areas was less successful.
- In our waste review⁵, published in March 2010, we recommended that objectives and standards for waste management in areas around venues and race routes were consistent with those set by London 2012 for inside venues.



The Last Mile near the Lee Valley White Water Course.



Accessible shuttle bus.



View along the Greenway.

Last mile

Related Recommendations



**Sustainable Games
Preparation Review**
Recommendation 8



**Waste and Resource
Management Review**
Recommendation 9

- The same 3 bin system found inside venues was employed in some cases along the Last Mile routes. This was generally where London 2012 was involved in the management or coordination, such as key routes to the Olympic Park and at Park and Ride sites.
- However, in many cases the Local Authority or landowner either employed their usual bin system or had no bin provision at all.
- For future major events the Commission would advise event managers to liaise with local authorities and adjacent landowners to ensure that waste management is consistent inside and outside venues.
- Despite the lack of bin provision there was minimal evidence of littering in these locations, achieved through a combination of successfully dissuading people to drop litter and effective street cleansing operations.

Ecology

- In our biodiversity review⁶, we expressed concern about the route from Cheshunt station to the Lee Valley White Water Centre, as it passed through part of the Lee Valley Special Protection Area that contains a Site of Special Scientific Interest (SSSI).
- The SSSI was adjacent to the route through the park to the venue, leading to the Commission stating that LOCOG, the ODA Transport Team and the Lee Valley Regional Park Authority (LVRPA) would need to manage the risk of damage to the environment by people straying off the route into sensitive areas and that we expected appropriate measures to be put in place.
- The Commission also commented that this route and other venues in green spaces provided an excellent opportunity for showcasing these environments and engaging people with nature.
- On walking this route during the Games we found a good level of stewarding and an effectively signposted route that was successful in keeping spectators from straying into sensitive habitats.
- There was, however, very little to communicate the ecological story of the surroundings and engage spectators with it.

Accessibility

- The approach to accessibility in the Last Mile was very effective overall and was particularly noticeable at venues such as Eton Dorney where it was making an otherwise potentially inaccessible venue much more accessible.
- Elements of the accessibility provision in the Last Mile such as the provision of accessible shuttle buses and effective integration with the spectator mobility services sets a new standard for major events to follow.

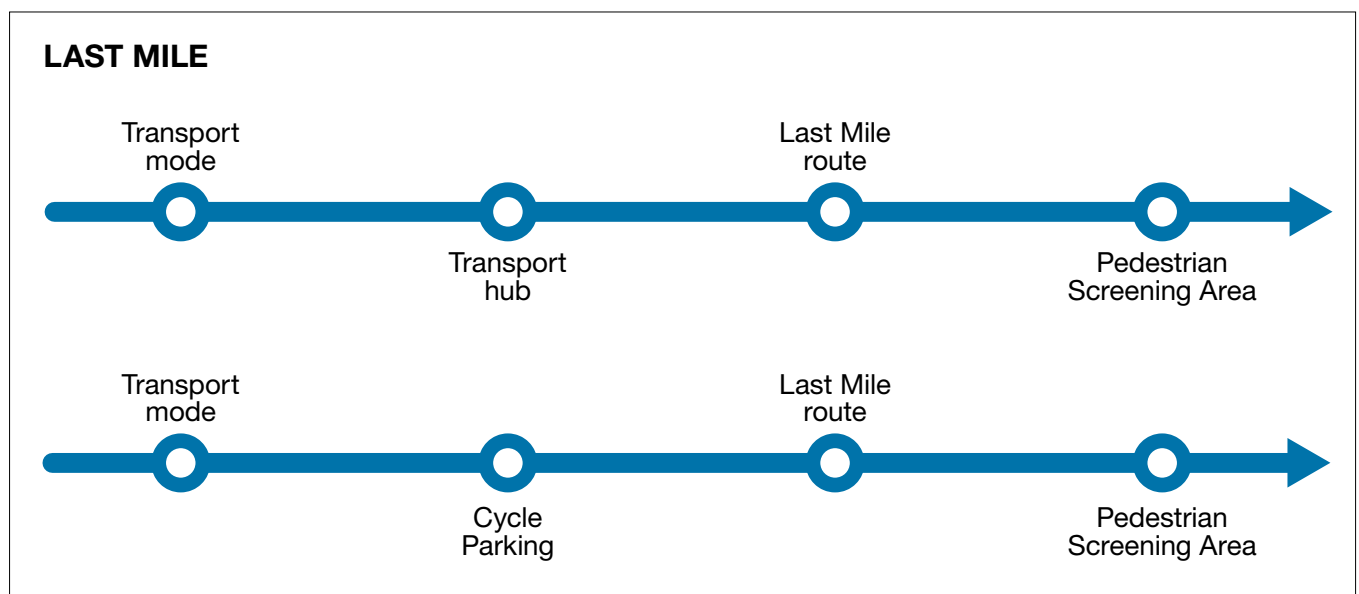
Last mile

Lessons learnt

For future major events

- We advise event managers and local authorities to work together and with adjacent landowners to ensure that waste management is consistent inside and outside venues. This would avoid any confusion and minimise the risk of there being a confused message about the event's sustainability commitments and standards.
- Elements of the accessibility provision in the Last Mile such as the provision of accessible shuttle buses and effective integration with the spectator mobility services sets a new standard for that the Commission believes major events should follow.

Stages of the process



Games-time communications

300+

Number of visitors spoken to

0

Number of sustainability focussed media alerts released by LOCOG

89

Commission media coverage pieces

200%

Percentage increase in hits to Commission's website during Games period



Megastore green Games message.



Inspire a generation.

London 2012 Targets and Commitments

1 To inspire a generation

Definition

In considering how the London 2012 Games has helped to 'inspire a generation', we have focussed on what role sustainability communications has played in achieving this aspiration.

The capacity to measure the impact of any particular programme on an individual's behaviour is often difficult. For this reason, we have focussed on what sustainability messaging was available to the media and online and what evidence there is of general on-line interest in sustainability and the Games.

We have focussed on sustainability communications originating from both LOCOG and the Commission. London 2012 was expected to be central and proactive contributor to sustainability related messaging at Games-time.

The Commission has a responsibility to report publicly and therefore also played a key role in communicating about sustainability at Games-time.

There was also a proportion of Games-time sustainability messaging for which neither LOCOG nor the Commission was responsible – for example, through investigative journalism.

Findings and Commentary

London 2012 - Media and Website

- Information received from LOCOG in the pre-Games period suggested that the LOCOG communications strategy would increasingly focus on sport as the Games drew nearer. Indeed, as far as we are aware, no specific press releases concerning sustainability information were issued by London 2012 during Games-time.
- However LOCOG was active in the build up to the Games, specifically issuing information on Active Travel (with TfL), its success in achieving ISO 20121 and on activities undertaken by their London 2012 Sustainability Ambassadors.
- Furthermore, the appointment of a Sustainability Communications Manager in April 2012 (who was also based with the press team at Games-time) and locating a Sustainability Office in the main press centre helped the team to maintain a proactive approach.
- LOCOG was also successful in securing a number of press interviews about sustainability.

The Commission – Media and Website

- The Commission experienced a significant appetite for sustainability commentary at Games-time, which was provided primarily to the media and via our own website.
- During the Games-time period, the Commission received 86 pieces of coverage in key national, international, respected trades and broadcast media (see Figure 1). This was split between 63% domestic media and 37% international media.

Games-time communications

Figure 2: Statistical breakdown of CSL media coverage during the London 2012 Olympics and Paralympics

	Domestic	International	General Green issues Legacy	Drinking water	Transport	Live Sites	Accessibility / Inclusion	Other
Jul	6	8	11	-	-	-	-	3
Aug	45	24	46	6	2	4	2	9
Sept	3	0	-	-	-	-	-	2
Totals:	54	32	57	6	2	4	2	14
	86							

- The prevalence of such a high level of international coverage demonstrated that the sustainability of the Games was not just a 'local' story and interviews were secured with titles from Australia, China, Germany, Sweden, USA, Finland, France, Brazil, Argentina and Holland. The majority of interest in the Commission's commentary that was broadcast or published internationally related to claims by organisers that London 2012 would be the 'most sustainable Games ever' and issues relating to legacy.
- Whilst, the coverage demonstrated a clear appetite for sustainability content it should be noted that during the Paralympic Games the interest in sustainability issues (other than accessibility and inclusion) was noticeably reduced, with a greater focus on the sports and athletes.
- A total of 9,266 people visited the Commission's website at least once over the pre- and Games-time period. This is compared to a total of 3,078 visitors over the same period the previous year (a 200% increase). The page views amounted to 20,400 and of the total number of visitors, 73% were new visitors, compared to 27% who were returning.
- During the Olympics, the Commission altered the format of the homepage to direct attention to a Commission short film telling the story about its work and our blog pages which contained the daily comment from the Commission on live sustainability topics. As expected, these sections proved the most popular, although the Sustainable Games section was also popular.



The Commission's website

Broader sustainability stories about London 2012

- There was significant media activity about the London 2012 Games domestically and internationally. Much of this activity referred to or focussed on sustainable elements of the Games experience. It is not possible to absolutely quantify the level of media interest in sustainability outside of the engagements we know about through our own experience. However, a simple search of the internet demonstrates that online content was written throughout the Games-time period and for a range of media outlets including mainstream, trade press and blogosphere sites.

Games-time communications



Invitation to attend a 'Walk in the Park'.



Walk in the Park activation.



BMW showcase.

On-Park Communications

London 2012 – Walk in the Park

- A proportion of London 2012's sustainability messaging to the public, the media and stakeholders was through the Walk in the Park.
- The media and stakeholders were able to book places on guided Walks run by the LOCOG sustainability team, and the public were able to follow subtle signage or access information via an app (we have addressed the value of messaging itself for Walk in the Park under the Look and Feel section of this report).
- Two of the London 2012 Sustainability Partners – BP and Cisco – held their own activations as part of Walk in the Park in part to promote the sustainable aspects of their business activities and therefore sustainability generally.
- BP had a large periscope feature located near the stadium where members of the public could have their photo taken with the Olympic Stadium backdrop (once they were signed up to the BP Target Neutral campaign). It was also intended to raise awareness of its commitment to offset the carbon footprint of spectator travel to the Games.
- Cisco's activation comprised of the CiscoCloud, a "large screen made from sustainable materials" where visitors could create their own image made from London 2012 pictures, playing a role in the company's demonstration of sustainable data storage.
- These Walk in the Park activations were not formally assured by the Commission, however we consider it disappointing that none of the other London 2012 Sustainability Partners chose to engage with Walk in the Park, and failed to use the opportunity to play a further role in communicating sustainability to spectators.

London 2012 – Sustainability Partners

- Four of the London 2012 Sustainability Partners chose to have showcases not related to Walk in the Park (BP had both).
- BP had a separate showcase near the Basketball Arena which promoted their core business activities to the public, as well as Target Neutral.
- EDF's Pavilion was located near to the Olympic Park, with the purpose to 'educate and inspire' 6,000 individuals each day about their activities and sustainability in general. During a visit, the Commission was impressed by the sustainability credentials of the showcase itself, in particular the use of natural cooling and light, the use of temporary equipment, the lack of timber in the structure and that the public were receiving some degree of education about fuel use.
- Finally, BMW's showcase consisted of a showroom containing information about their products and sustainability credentials. The water cascading down the sides of the building was intended to be a symbol of sustainability with the water being pumped from the canal to cool the building. However, the Commission has concerns

Games-time communications

that this cooling was being supplemented with less sustainable (and less visible) methods. This is covered further in the Environmentally Sensitive Materials section of this report.

- BT and GE declined the opportunity to showcase on the Park.

London 2012 – Promotion of sustainability features

- There was a large amount of more subtle messaging on sustainability throughout the Games. This included, but was not limited to, the visual impact of the London 2012 bin sets promoting waste segregation, the use of compostable packaging, Fairtrade menu items and messages about recycling on menu boards, the landscape of the Park, use of existing venues, and high visibility of the Games Mobility service. In this respect, many sustainability features ‘spoke for themselves’, setting a powerful new norm for large events.
- However, there were some missed opportunities to further communicate the sustainability achievements of the London 2012 programme to the public. For example, information about the sustainability features of buildings was largely absent for the average spectator, as was information about innovations around energy usage on the Park.

Engagement with spectators

- During the Games period, our team engaged with spectators in a variety of locations inside and outside of official venues. We were interested in hearing spectator views about the relative sustainability and accessibility of the venues they had encountered.
- Most people chose to comment about the Park itself, the regeneration of the East End and the development of the Park, village and surrounding area. The parklands and gardens were highlighted as key sustainability features, and on the whole those spoken to were impressed with the general look and feel of the area. The waterways, green space and the walkways along the river were also highlighted by many as noticeable sustainability features.
- Within the Park itself, visitors commented that the recycling processes worked well and that the recycling waste streams appeared to be effective. Many people commented on how clean the Park was, with a noticeable lack of litter. The drinking water available at the venues was seen as a positive aspect with several people commenting that this was very beneficial.
- Some people demonstrated some knowledge of the regeneration of Stratford and the East End and some insight into what was involved in the development of the area. Other people also commented that they were aware of the plans and legacy for some of the buildings and materials.
- Many people we spoke to believed that the transport system was effective and worked well and were impressed with the free travel they received with their tickets. People were very positive about the Paralympics and acknowledged that the Games had increased the public’s awareness around disabled people. Several commented on the good accessibility for disabled people and mentioned how



The Great British Garden in the Olympic Park.



Phone box feature on the Olympic Park.



Spectators enjoying the Olympic Park Live Site.

Games-time communications

effective transport and mobility services around London and at venues had been. Many also cited the effort from volunteers and the Games Makers and how invaluable they had been in making the Games accessible.

Lessons for the future

- Future event organisers should be optimistic about the level of media attention they will receive for their sustainability initiatives.
- The appetite for sustainability stories appears to be on the rise and the level of complexity of these stories is also quite high. This means that future organisers can effectively plan for sophisticated messaging to be picked up by the media and the public.
- While the media spotlight brings the attention of the world to the Games to focus on sport it also has a huge appetite for digesting information about the place, the people and the things that make the event unique. This is a powerful lever for embedding behaviour change messages.



Games Mobility Shuttle Service.

Appendix

Additional CSL communications data

Content issued to the media by the Commission for a Sustainable London 2012 during the Olympic and Paralympic Games

Date issued	Theme
28 Jul	Opening ceremony (cauldron)
01 Aug	Drinking water, public transport
03 Aug	East end economy
03 Aug	Film and event
04 Aug	Live Sites
06 Aug	Sports participation
07 Aug	Film and event (invite)
08 Aug	Legacy
10 Aug	Wrap-up
13 Aug	Wrap-up on accessibility and inclusion

Olympic Venues

OPK	Olympic Park
OPV	Olympic and Paralympic Village
BOX	Box Hill
BRH	Brands Hatch
EXC	Excel Centre
ECO	Earls Court
ETD	Eton Dorney
GPK	Greenwich Park
HAD	Hadleigh Farm
WWC	Lee Valley White Water Centre
LOR	Lords
LVS	Live Sites
HGP	Horse Guards Parade
HPK	Hyde Park
NGA	North Greenwich Arena
OTH	Other Stadia
RAB	Royal Artillery Barracks
MAL	The Mall
WAS	Wembley Arena and Stadium
WEY	Weymouth
WIM	Wimbledon

Olympic Park and Village



OPK

OPV

BOX

BRH

EXC

ECO

ETD

GPK

HAD

WWC

LOR

LVS

HGP

HPK

NGA

OTH

RAB

MAL

WAS

WEY

WIM

Olympic Park and Village

Description

The Olympic Park was the heart of the action of the Olympic and Paralympic Games. It contained five permanent competition venues:

- Olympic Stadium
- Aquatics Centre
- Velodrome
- Copper Box
- Eton Manor complex

And 3 temporary competition venues:

- Water Polo Arena
- Basketball Arena
- Riverside Arena

It also contained parklands, public realm, sponsor showcases, the International Broadcast Centre, Main Press Centre and a range of catering, hospitality and retail facilities.

The Olympic and Paralympic Village was constructed adjacent to the Olympic Park and will be converted into 2,800 dwellings after the Games. Approximately half of the dwellings have been sold to a consortium of registered social landlords to become affordable housing. The development is the first major development scheme to achieve level four of the Code for Sustainable Homes. During the Games the athletes accommodation had no kitchen units installed and a major temporary catering complex was established on the site.

Commentary

The Commission assured all of the themes covered in this report on the Olympic Park at some point during the Olympic and Paralympic Games. We observed the Aquatic Centre, Velodrome and Water Polo Arena during competition. We observed the stadium between the end of the ceremony and the start of athletic competition but not during competition. We observed the other venues in operation during test events. We observed the Village in operation during both Games.

Specific thematic elements are covered elsewhere in this report. We have the following overarching commentary:

- The Park's design operated well under days of high spectator numbers. Log-jams were rarely experienced and spectators were able to find their way around easily;
- The Parklands were remarked upon positively by spectators, and provided a strong link to the river and to the ecological communities that make up the Lower Lea Valley;
- However, in several places parklands were trampled, and LOCOG had to take defensive action, roping off sections to avoid further damage;
- The London 2012 live site which operated in an area in the north park was very popular and there long queues at times for people to access this area;
- Extensive damage to parklands bordering the live site by people trying to get a view of the screen adds weight to the concern that the live site was too small to meet demand, and that the location of the live site was not originally envisaged by parklands designers;
- The lack of shade across the whole Park was a concern expressed by the Commission prior to the Games. The crowding at the Live site in part bears out this concern as it was one of the few places on the Park where shade was available.

Box Hill



Description

Box Hill in Surrey was a venue for the hill stages of the men's and women's road cycle races during the Olympics. It was not in operation as a venue during the Paralympics as the road cycle racing was in and around Brands Hatch motor racing circuit in Kent.

Box Hill was not originally planned to be a ticketed venue but following the 2011 test event it was decided to turn it from a restricted spectator location to a larger ticketed area to accommodate the large demand for viewing locations on the hill stages.

The venue was split into two parts: a lower area where crowds lined the roadside on areas where vegetation had been thinned out to allow access and to encourage earlier successional species to re-establish afterwards; and a higher area with several roadside locations, one larger space on an area of longer grassland that had been approved for use and a central point where a large screen was erected and catering and toilet facilities set up.

As a result of the later addition the venue was ticketed by LOCOG but with many aspects managed by the Local Authority, who controlled the waste and catering at the venue. The LOCOG Sustainability Team's actions at the venue focussed on ecological protection, preventing damage to the sensitive habitats in the area.

Access to the venue was from local railway stations, which were 40-60 minutes walk from the site. The routes were well signed and spectators were warned about the relatively steep hills involved (the reason for the location).

Commentary

Site Management

- The main concern was how to protect the ecological value of the area whilst allowing spectators and media access to view the racing.
- During the event the LOCOG Sustainability Team were stationed at key locations to prevent the public from entering areas where they would damage the ecology.
- Some communications boards had been installed by LOCOG to communicate about the ecology of the site and help people to respect the natural environment.
- Spectators were not accessing the most sensitive areas and generally showed respect to the natural environment.

Catering

- We were advised that the catering near the large screen in the venue was managed by the host Local Authority who had appointed a series of mobile caterers.

OPK

OPV

BOX

BRH

EXC

ECO

ETD

GPK

HAD

WWC

LOR

LVS

HGP

HPK

NGA

OTH

RAB

MAL

WAS

WEY

WIM

Box Hill

- The food vision was not being applied by these caterers. There were no Fairtrade products on sale, the fish was not MSC certified and there was no apparent use of Red Tractor products.
- The Commission is very disappointed that the Local Authority did not apply the London 2012 Food Vision in appointing these caterers or that LOCOG did not require them to do so one it became a ticketed venue.
- This was in contrast with one policy that was applied at the location with vendors not being allowed to sell chips on their own “due to sponsorship restrictions”.

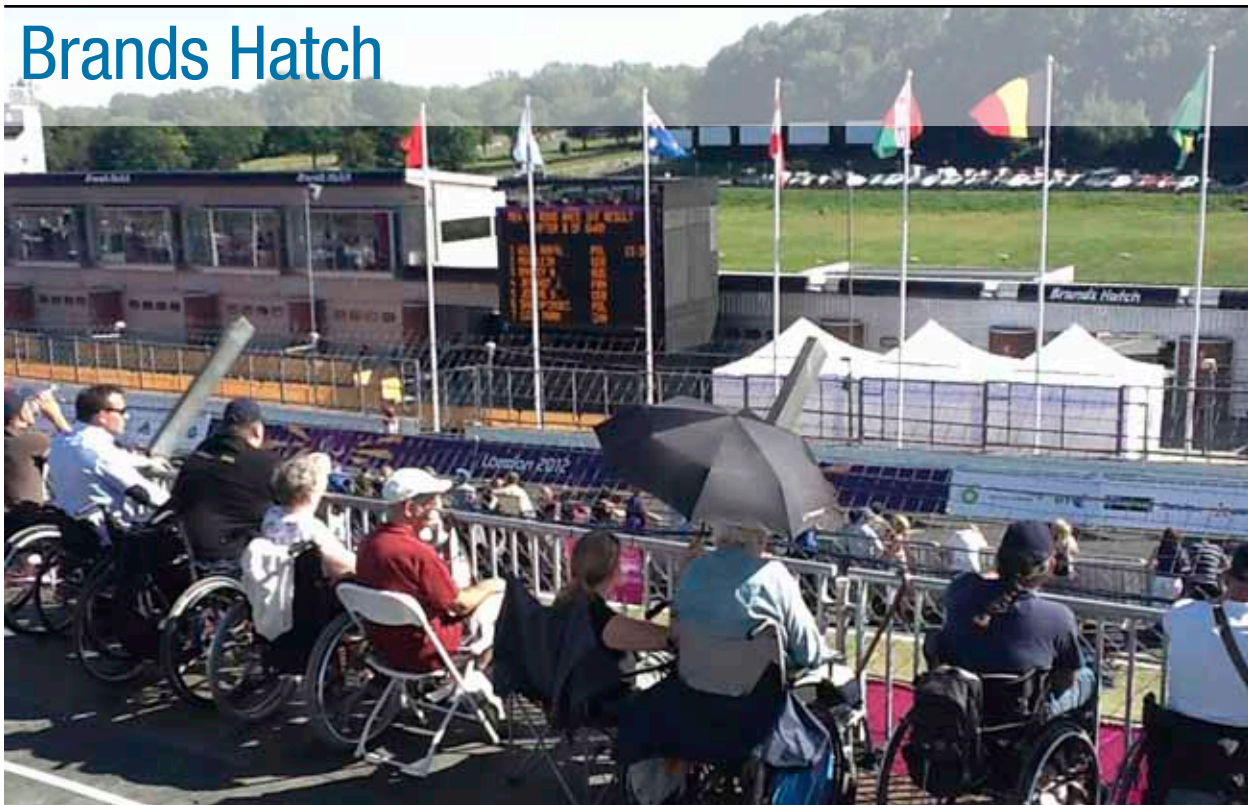
Waste management

- We were advised that the waste management at the venue was managed by the host Local Authority.
- No black bins were supplied, leading to the cleaning company putting black sacks in the compostable waste bins which were to be for disposal as general waste.
- This created confusion and significant cross contamination of waste streams.
- By the end of the day the bins were overflowing and piles of rubbish were stacked around them.
- Once this had happened more littering became apparent with people leaving their rubbish behind at the end of the event making the area by the large screen one of the few places where littering occurred during the Games.
- One positive note was that this littering did not occur in the more ecologically valuable and sensitive parts of the site.

Access and Last Mile

- The routes to the venue from the local railway stations were well signed and volunteers and staff were on hand at key locations to direct people.

Brands Hatch



Description

Brands Hatch was used during the Paralympic Games to host road cycling events. Near Sevenoaks in Kent, the venue is a renowned motor racing circuit and comprises a large road circuit, trackside team and spectator facilities, viewing areas, a cafe and adjacent space for spectator and transport parking.

LOCOG installed additional temporary facilities including accessible pedestrian trackway, accessible viewing platforms, spectator seating, temporary catering facilities, toilets and drinking water facilities.

A shuttle service operated between Brands Hatch and Sevenoaks rail station every 30 minutes. A free cycle park and cycle maintenance service was available at the venue and substantial blue badge parking.

The venue is built within a gently sloping valley of surrounding hills. Spectator areas were on one side of the venue, on the slope of a hill. Access to the venue was from the apex of the hill.

Commentary

Brands Hatch performed well as a venue for Paralympic road cycling despite its obvious challenges of being based on a hilly and sloping site and in a remote location from London. LOCOG ensured that the site was generally accessible and that transport assistance was operating at all times.

There were some accessibility challenges in some locations including where spectator pinchpoints created problems for wheelchair users to get access from one part of the site to another. The nature of the venue itself was largely the reason these occurred, rather than any lack of accessibility planning or provision.

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Description

ExCeL hosted seven Olympic and six Paralympic sports, making it the largest of the London 2012 competition venues with a total of 5 different arenas¹⁰. Situated in the London Docklands area, no additional construction was required to the venue and it will be returned to the owners post-Games.

In 2012, ExCeL became the first private venue to achieve BS8901 and ISO14001¹¹.

Commentary

The Commission conducted assurance at ExCeL during the Paralympic Games and considered a range of themes including accessibility, energy and waste.

Accessibility was positive with public walkways free of trip hazards, and ramps and access ways unobstructed. Accessible seating was available within the venue and sufficient space for disabled spectators was evident. The Commission also observed that mobility vehicles were being used effectively and that assistance dogs were provided for in terms of drinking water and spending areas.

ExCeL had good energy management plans, and the necessary facilities in place to reduce energy usage where possible. Both the ExCeL Energy Manager and the Facilities Manager were working directly for LOCOG and information was reviewed on a weekly

basis to monitor energy usage against targets. The main demands for energy centred around air conditioning and lighting, and it was noted that the Olympic Broadcast Service (OBS) had requested power factor correction turned off but that this had been denied by LOCOG for the sake of energy conservation.

On waste, the Commission identified incomplete or incorrect bin sets in several places and problems with inconsistent waste streams between the inside and the outside of the venue.

Earls Court



Description

Earls Court is an existing venue in West London. For the Olympic Games an arena and volleyball court were constructed in one hall of the existing venue, with a warm up arena and back of house facilities constructed in the second hall. It was not in operation as a venue during the Paralympics.

Commentary

The Commission assured the waste and catering provision at Earls Court during the Olympics.

- The waste management appeared to be operating effectively
- Bin sets varied from two bins to three bins, with a lack of general waste bins (as was the case at many venues).
- This was reported to be an intentional policy at Earls Court as LOCOG anticipated very little waste that could not be recycled or composted and so venue managers did not want recyclable or compostable materials going into the general waste stream.
- The waste compound appeared well managed, although it was not in active use at the time of our visit.
- It was reported that some additional sorting of waste was undertaken in the compound, as this was normal practice for waste operations at Earls Court.
- The incumbent caterer had responded to the London 2012 Food Vision and had taken steps to ensure they supplied Red Tractor and Fairtrade products.

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Eton Dorney



Eton Dorney is an existing rowing course in the grounds of Eton College. Several upgrades were built prior to the Games, along with the installation of temporary seating. It hosted the rowing and flat water canoeing during the Olympics and rowing during the Paralympics.

We observed the venue itself at a test event, the Park and Ride system and accessibility to the venue entrance during the Olympics and the interior of the venue during the Paralympics.

Commentary

We were particularly keen to assure the accessibility of Eton Dorney and observed the process of getting to the venue during the Olympics and both getting to and inside the venue during the Paralympics. We found:

- The Park and Ride to be both effective and accessible, although level of demand for the service did not appear to meet that forecast.
- The accessible minibus shuttle service from the recommended railway stations to be working well.
- That the accessible minibus shuttle service was well integrated with the Venue Spectator Mobility Service.
- That trackway was being used effectively to protect and make parts of the venue level.
- That the accessible seating was well planned out and was being utilised.

- We received unprompted positive feedback from a wheelchair user at the venue.
- That the audio description service for people with a sight impairment was not well known about and was hard to get hold of.
- In general the accessibility services made what could have been a very inaccessible venue much more accessible.
- We also observed the waste management and catering during the Paralympics and found them to be functioning well.

Greenwich Park



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Description

Greenwich Park is the oldest enclosed Royal Park covering 73 hectares in South East London. For the Olympic Games it hosted the equestrian events, including dressage, cross-country and show jumping, as well as elements of the Modern Pentathlon. During the Paralympics it hosted the dressage.

A 23,000 seat temporary arena was constructed for the Games and a cross-country course established around the park. After the Games the venue and the cross-country course will be removed and the park is due to be restored to its previous condition.

The Commission observed the venue at a test event, during construction and during the Olympics.

Commentary

Site management

- Heavy rainfall during venue construction led to the removal of some grass and soil from the site of one of the spectator stands and an aggregate base being laid.
- This was accepted as an appropriate solution to ensure the stand could be safely constructed whilst managing the impact on the park.
- After the Games the aggregate will be removed and the grassland re-established.

- The grass on the route of the cross-country course needed to be improved in places to establish a suitable course. In some places this meant altering acid grassland areas.
- Now the Games are over these are to be scarified and returned to acid grassland. In addition further areas of acid grassland are being created in the park.

Waste and catering

- During the cross-country day, when the whole park was in operation as a venue, the Commission found the standards for waste and food to be variably applied.
- The standards were maintained around the arena but the bin sets were incomplete in places, particularly in the south of the park.
- Caterers who had been brought in purely for this day, in one corner of the park, were not compliant with the London 2012 Food Vision.

Hadleigh Farm



Description

A new mountain bike course was constructed at Hadleigh Farm in Essex for the Olympic Games. Further enhancements are also planned for legacy by Essex County Council. For the Olympic Games 3,000 temporary seats were installed with a crowd of approximately 20,000 attending and viewing the race from places around the course. Accessible seating areas and wheelchair platforms were installed in several locations.

To make the venue accessible by public transport a shuttle service was provided from local railway stations and a Park and Ride service set up to run from several sites. Two secure cycle parking locations were set up, recognising that there might be particularly high demand for cycle parking at this event given that the spectators may be keen cyclists themselves.

Commentary

During the Games the Commission assured the external areas of the venue with a particular focus on access and transport modes, having carried out assurance inside the venue at the test event and during construction prior to the Games.

- We cycled to the venue to try the secure cycle parking facilities.
- These were not well sign posted but we found them through assistance from Games Makers and transport staff.
- The facilities were fairly well used, with the northern cycle park having 400 cyclists use it and the southern cycle park approximately 200. The northern cycle park also provided a free basic cycle maintenance service.
- The Park and Ride and bus services from the railway station were dropping off at a location that left a reasonable walk to the Pedestrian Screening Area (PSA).
- Both the bus drop off point and the walk to the PSA used aluminium trackway to protect the ground underneath and help ensure the route was accessible.

Lee Valley White Water Centre



Description

This venue is located in Waltham Cross, within the Lee Valley Regional Park.

It comprises two courses – a ‘300 metre Olympic-standard competition course with a 5.5m descent’, and a ‘160m intermediate/training course with a 1.6m descent’¹². A total of 15 cubic meters of water per second is pumped down the course, fed from the accompanying 10,000 sq. metre lake¹³.

Operational during the Olympic Games only to host the Canoe Slalom event, the venue has 12,000 temporary seats installed for competition mode¹⁴.

The Lee Valley White Water Centre was custom built between July 2009 and December 2010. It was the only London 2012 venue to be open to the public ahead of the Games, and was the first new venue to have re-opened to the public after the Games has finished.

The venue will remain fully operational in legacy, funded by the Lee Valley Regional Park Authority. A sports development programme will be offered by the British Canoe Union and the venue will be hosting the Canoe Slalom World Championships in 2015¹⁵. It will also remain open for public use. Built in one of the most deprived areas of Hertfordshire, the intention is that the centre will act as a catalyst

for further regeneration, business development, educational opportunities, and as a source of employment within the local area¹⁶.

Commentary

The Lee Valley White Water Centre has a significant legacy in that it remains open for public use post-Games. The course is designed to be used by the public as a leisure facility as well as elite athletes for competitions.

A significant proportion of recycled materials were used in construction, particularly recycled aggregate. However, the building only achieved a BREEAM “Very Good” rating instead of “Excellent” – nonetheless, this is commendable. The pumps used to transport the water from the lake down the courses do require a considerable amount of energy.

Assurance of Last Mile arrangements relating to this venue was conducted during the Olympics. The Commission had previously highlighted to the delivery bodies that there was a risk of damage to the Site of Special Scientific Interest (SSSI) – part of which lies adjacent to the route between Cheshunt Station and Lee Valley White Water Centre. However, the Commission was satisfied that sufficient stewarding and signposting was in place during the Games-time period to mitigate this risk to the environment. Further information can be found in the Last Mile section of this report.

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Description

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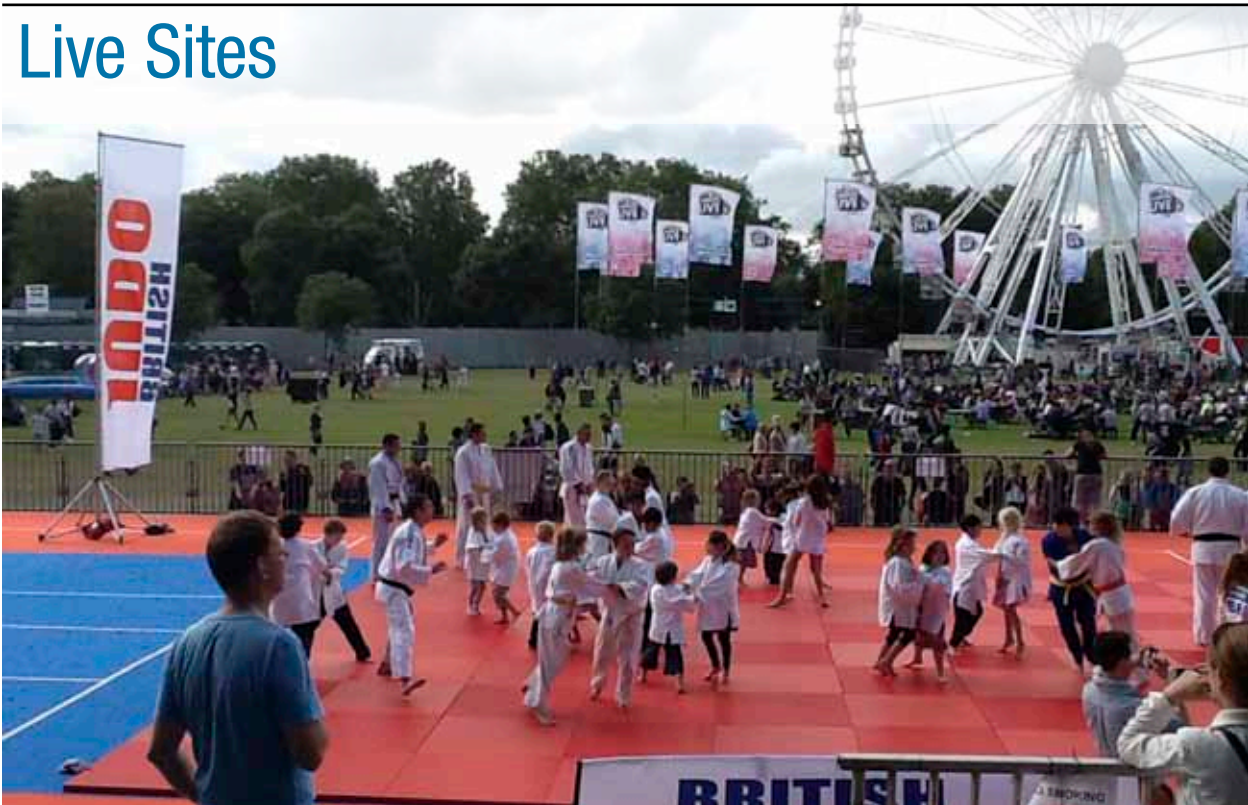
Lords Cricket Ground is the home of the Marylebone Cricket Club. It is situated in North-West London. For the Olympic Games a temporary archery range flanked by two stands was constructed in the outfield of the cricket pitch, with arrows being fired over the square that contained the wickets. Supporting facilities were constructed in the adjacent nursery ground. The stands surrounding the cricket pitch were only used for some supporting facilities, such as workforce catering. It was not in operation as a venue during the Paralympics as the archery moved to Royal Artillery Barracks and Lords hosted a cricket test match shortly after the Olympics.

Commentary

The Commission assured the waste and catering provision at Lords during the Olympics.

- The waste management appeared to be operating effectively, although the bin sets varied from two bins to three bins, with a lack of general waste bins (as was the case at many venues).
- Bins that were normally in use at the venue were deployed and were supplemented in some places by the new bins LOCOG had procured for the Games.
- This meant there was a lack of consistency for spectators but this strategy prevented the need for more new bins to be produced and for existing bins to be stored away while new ones were used for the Games.
- This venue was assured at an early stage of the Games and some issues with incorrect bags being used in a number of bins and a build up of waste in the compound were being addressed at the time of our assurance.
- The London 2012 Food Vision was being implemented with evidence of Red Tractor and Fairtrade products on sale.

Live Sites



Description

- All live sites were enclosed by a security perimeter and incorporated outdoor screens and live stages, food, free drinking water and toilet facilities.
- The larger live sites at Hyde Park and Victoria Park also incorporated pay-per-go rides and free activities as part of the 'Have a Go at Sport' programme of events.
- Entrance was free for all venues but subject to security bag searches.
- Food and drink were not permitted to be brought into the venue.
- Entrance on the days of the opening and closing ceremonies was ticketed, but tickets were free, although they had to be booked online.
- A zero waste to landfill policy applied to the BT London Live sites (and to Potters Field*) with waste arising being collected via a single bin system and being sorted at a waste transfer station into recyclates and residual waste (which was incinerated).

Commentary

- Disabled access was good, including viewing platform, dog spending area, changing places toilet and hearing induction loops.
- The 'Have a Go at Sport' programme was observed to be warmly appreciated by parents and children
- Prohibitions on bringing in food were at odds with LOCOG policy at sporting venues and acted as a barrier to affordability
- Caterers were not London 2012 Food Vision compliant
- Single waste bins were a lost opportunity for encouraging behaviour change in recycling

*Note:

Potters Field live site was organised separately by the GLA as a free to enter space incorporating a live screen, and local food providers who sold a selection of healthy and culturally diverse food. It was not subject to the security conditions imposed on other sites. We commend the GLA for the food offering at this live site.

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Horse Guards Parade



Description

Horse Guards Parade was used for the beach volleyball competition during the Olympics, and was not in use during the Paralympics.

Horse Guards Parade is another of London 2012's temporary venues, with 15,000 seats available over two tiers in operational mode. Flood lighting towers were situated at each of the four corners of the court and there were also a number of practice courts surrounding the main court. Construction of these temporary stands took place shortly before the Games in June 2012, with the area being vacated and returned to the owners post-Games.

The 5,000 tonnes of sand used during the competition was sourced from a quarry in Surrey. Almost half of the sand used for the test events series (2,274 tonnes) was donated to a number of local projects as a contribution to the sports participation legacy of the Games¹⁷.

Commentary

The Commission visited the venue during the 'London Prepares' test events series and again during the Olympics. The Games-time visit focussed specifically on the themes of energy management, water management and logistics.

Overall, the site was well managed from a sustainability perspective, particularly given the high turnover of visitors – during Games-time the venue was hosting 60,000 visitors per day.

The Venues Sustainability Advisor highlighted the workforce and 'back of house' areas as particularly successful examples of waste management practices, however overall the amount of waste generated at Horse Guards Parade had been higher than expected. Consequently, several bin sets were incomplete in places, with insufficient 'general waste' bins (black bins). In light of this some adjustments had been made after the first day of operation, and the Commission was advised that the necessary bins were being diverted from other sources (specifically, the Mall) in order to accommodate the increased level of waste.

There were some incidents of outdoor lighting being left on during the day, primarily on practice courts and in security tents.

Hyde Park (as a London 2012 competition venue)



Description

Hyde Park is one of the city's Royal Parks. It hosted the 10km Marathon Swim, and the swimming part of the triathlon event in the Serpentine Lake during the Olympics¹⁸. It did not host competition events during the Paralympics. Temporary seating was installed for spectators for the duration of the Games, and London 2012 and park management cooperated to ensure that impact to the 350 acre park itself was as minimal as possible.

Commentary

The Commission did not conduct formal assurance over Hyde Park as a London 2012 competition venue, however as part of the Commission's active travel observations, it was noted that many cyclists appeared unaware of the three secure cycling parking spots. A greater effort to communicate these might have increased the poor take-up of the cycle parking facilities.

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North Greenwich Arena



Description

The O2 Arena (built within what was formerly the Millennium Dome) was known as North Greenwich Arena during the London 2012 Olympic and Paralympic Games and in the London 2012 London Prepares series. The venue is located on a peninsula of the Thames in South East London and contains a multi-purpose arena and a smaller music venue, surrounded by an indoor restaurant 'street'.

During the Games, the venue hosted trampolining, artistic gymnastics, basketball and wheelchair basketball competitions.

- Spectators coming on public transport experienced five different waste systems in the space of 400 metres, from the station, the public realm surrounding the arena, the spectator security mall, through the outer ring of the venue (the restaurant street), and finally into the arena itself.
- LOCOG's sphere of control only covered the arena itself and the spectator mall. Bins at the train station, outside the spectator mall, and in the restaurant street were of a different design to LOCOG.
- LOCOG's bin strategy inside the arena varied from other venues as it used the existing bin facilities (which were built into the wall) to support its three source separation approach

Commentary

- The NGA is a borrowed venue and LOCOG had to work within the constraints of the venue design and in tandem with existing energy management and waste protocols and facilities.
- The approach to waste for this venue was confusing due to the number of different approaches at work within and outside the venue.

Other Stadia



Description

A number of other stadia were utilised by London 2012 during the Olympics for use as football venues. These included the Millennium Stadium (Cardiff), the City of Coventry stadium, Old Trafford (London), St James' Park (Newcastle) and Hampton Park (Glasgow).

All venues were used on a temporary basis and were returned to the original owners in legacy.

Commentary

The Commission did not formally assure the Olympic Games football venues. However, a member of the Commission provided detailed observations, primarily concerning waste management, based on a visit to the Millennium Stadium in Cardiff.

There was evidence of effective waste streams and waste segregation at this venue and the availability of recycling bins was good, and contamination low. However, inconsistent labelling on the recyclables bins confused spectators, and the food waste bins were located out of sight of the food vendor area with volunteers seemingly unaware that there were food waste bins provided. In some cases, there was up to 100% contamination of the food waste bins. Some condiments stands had only a single bin bag located nearby that collected all waste with no opportunity for waste segregation.

Informal interactions with volunteers at the venue appeared to demonstrate that they were well informed about the availability of sustainable modes of travel, but that their ability to assist with identifying the correct waste streaming bins and helping spectators to clarify this was considered poor.

During the Olympic Games, Victoria Park, Hyde Park and Trafalgar Square comprised three open air venues as part of 'BT London Live'. During the Paralympics only Trafalgar Square operated as a livesite. BT London Live was organised by events management company Live Nation which hosted a season of commercial, ticketed live events prior to the commencement of BT London Live. In exchange for this commercial opportunity, Live Nation agreed to host BT London Live as free events for the public to attend. The contract was managed by the Mayor of London and included a number of other partners including Royal Parks, London Borough of Tower Hamlets, London 2012 and the London 2012 sponsors.

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Royal Artillery Barracks



Description

This venue at the Royal Artillery Barracks was used to host the shooting during the Olympics and both the shooting and archery competitions during the Paralympics. It comprises a combination of indoor and outdoor ranges.

The structure was erected between the beginning of 2011 and 2012 on a temporary basis, incorporating 18,000 sq. meters of PVC membrane around the main structure¹⁹ and steel for the frame; a high proportion of which was taken from existing stock²⁰. The coloured patches seen on the outside of the building allow for natural ventilation and light.

Given its temporary nature, the main building has been scheduled for removal in the post-Games period and the site returned to the owner – the Ministry of Defence. Consequently, the site will not be open to the public in legacy. As far as the Commission is aware, the future use of the materials used in the temporary structure is still to be decided.

Commentary

During assurance around the ‘London Prepares’ series of test events, the Commission identified significant areas of concern relating to this venue.

However, following extensive discussion with the Commission about these conditions, LOCOG rectified these. The Commission commended the sustainability team and venue colleagues for their efforts and understand that lessons have been learned.

During the Olympics, the Commission also considered management of waste and environmentally sensitive materials as specific themes. Overall the evaluation was positive with bin sets complete and processed correctly, waste compounds well ordered and only one incident of non-compliance with the use of FSC certified timber identified, which had been rectified by LOCOG.



Description

The Mall was the start and finish point for the men’s and women’s marathon races in the Olympics and Paralympics and the start and finish point for the men’s and women’s road cycling in the Olympics.

Temporary stands were erected alongside the road, which were removed after the Games. Back of house facilities in St James Park were shared with the temporary arena at Horse Guards Parade.

Commentary

The Commissions assurance of the events at The Mall primarily focussed on the “Last Mile” areas around the race routes and the back of house facilities in St James Park, as The Mall itself was a relatively small venue with ranks of seating along the roadside. Commentary on the back of house can be found in the Horse Guards Parade venue section.

Accessibility

- Accessible routes to The Mall and Horse Guards Parade were set up from Green Park tube station and from a nearby Blue Badge parking location. These were supported by Spectator Mobility Services.
- The course itself was marshalled by Games Maker stewards, particularly managing the crossing points.

Last Mile

- The Last Mile around the race route had no specific Games-time bin provision. No extra bins were in place, relying only on the provision of normal street bins in some places and having no bins at other locations.
- Despite this, there was minimal littering in evidence, either through people respecting the area and taking any litter with them or through effective street cleansing operations, or a combination of the two.

Wembley (Arena and Stadium)



Description

Wembley Arena

Located in north-west London, this venue was used to host the badminton and rhythmic gymnastics during the Olympics. It was not in use as a competition venue during the Paralympics. According to London 2012, the main modifications to the venue during the Games were the flooring and lighting installation²¹. The venue will return to the owners in legacy.

Wembley Stadium

The stadium was used to host the football during the Olympics, and was the largest of six venues hosting the sport²². Modifications to the stadium during the Games included 'temporary screening areas for spectators. The venue will return to the owners in legacy²³.

Commentary

Wembley Arena and Wembley Stadium

The Commission did not conduct formal assurance over this venue. A risk profiling exercise was undertaken prior to the Games and this venue was not perceived by the Commission to be a significant risk. The main differences to existing operations were assured at other venues.

Weymouth and Portland Harbour



Description

Weymouth and Portland Harbour hosted the sailing for the Olympic and Paralympic Games. Three venues were used as part of the Games including the Weymouth and Portland National Sailing Academy and marina, the Nothe and Weymouth Beach, in addition to the marine course itself.

The Weymouth and Portland National Sailing Academy (WSPNA) was at the heart of the non-spectator venue. The ODA worked with the Academy to upgrade facilities including building a new slipway, expanding the berth capacity of the marina and extending a new dinghy park. London 2012 also commissioned a bespoke athletes village which was built on adjacent land.

The Nothe is a natural area of geological significance along the cliff of Portland Harbour. It hosted a ticketed spectator area including a large screen, food outlets, and toilets.

Weymouth Council hosted a free, live site on Weymouth Beach. The live site incorporated a screen, rides, food and facilities and was contained within a security perimeter.

The marine course is within Portland Harbour. The marine environment has recently been given a new status of Marine Special Area of Conservation.

Commentary

Weymouth and Portland Sailing Academy is one of the outstanding examples of the way in which London 2012 has positively impacted on local communities and facilities.

- It exceeds the standards of the Disability Discrimination Act, offering excellent disabled facilities with ramps, Braille signs, separate toilets and showers and a lift.
- The Academy has been described by Natural England as 'an example of best practice' in relation to the agreements in place to protect the sensitive environment and the unique flora and fauna of Portland Harbour.
- The ODA construction received a CEEQUAL (Civil Engineering Environmental Quality Assessment and Award Scheme) Excellent award.
- The Academy building has the largest photovoltaic array for the generation of solar electricity so far installed in South Dorset. It recovers 'grey water' from the roof to use for boat washing instead of mains water.
- WPNSA is committed to increasing its usage of renewable energy and state that it is on track to achieve the LOCOG target of 20 percent of the electricity requirements being met by new local renewable energy sources by 2012.

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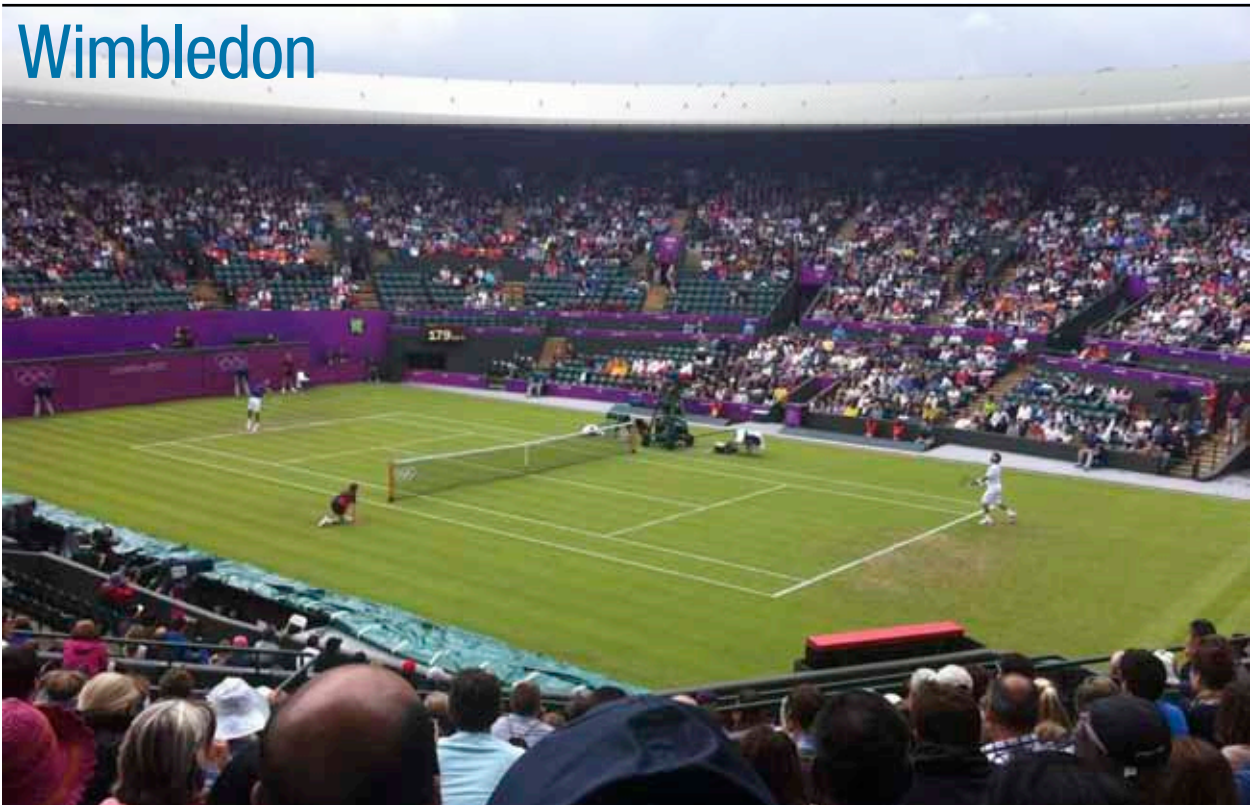
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Weymouth and Portland Harbour

The Nothe is an area of geological significance and the impacts of spectators on the cliff edge were carefully considered by Natural England and Dorset Wildlife Trust. We observed a careful approach by live site operators to ensuring spectators were kept away from the cliff edge. No temporary seating was erected other than a platform for disabled spectators. This minimised any potential damage to the grassy banks used by spectators.

We did not carry out detailed assurance on the beach Live Site.

Wimbledon



Description

The All England Club at Wimbledon was used for the Olympic tennis tournament, utilising facilities that are in place for the annual Wimbledon tennis tournament. The Paralympic Wheelchair tennis tournament was held on new hard courts at Eton Manor, a new site to the north of the Olympic Park.

Commentary

The Commission did not carry out formal assurance of Wimbledon, having carried out a risk profiling exercise prior to the Games. This exercise identified that Wimbledon was not perceived to be a significant risk in terms of sustainability as the main differences to existing operations were the food and waste, which we would be assuring at other venues.

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Appendix – Themes

Information gathering

The Commission met with the following people during the assurance at the Olympic and Paralympic Games

Theme	Who we spoke to
Food	SODEXO Olympic Park Prestige
	SODEXO chefs
	Prestige Catering Greenwich Park
	Amadeus front of house caterers
	Aramark Village Manager
	Head of LOCOG Catering, Cleaning & Waste
	Catering, Cleaning & Waste Manager, Earls Court
	Catering Manger for incumbent caterer, Earls Court
	Catering, Cleaning & Waste Manager, Excel
	Catering, Cleaning & Waste Manager, Riverside Arena
	McDonalds Olympic Park Manager
	Head of OBS
	Head of Sustainable Events, the Nothe, Weymouth
	Head of Events, Live Nation (Hyde Park and Victoria Park)
	GLA London 2012 Sustainability Manager
	Event Manager, Picture on Potters Field
	LOCOG Sustainable Venues Team
Waste	Head of Catering, Cleaning and Waste, LOCOG
	SITA Site Waste Manager, Barking Depot
	Head of Waste, LOCOG
	LOCOG Sustainability Team
	Catering, Cleaning & Waste Manager, Earls Court
	Catering, Cleaning & Waste Manager, Excel
	Catering, Cleaning & Waste Manager, Riverside Arena
Energy	LOCOG Sustainable Venues Team
	Venue operational managers
	LOCOG Energy Manager
	Venue energy managers
	LOCOG energy conservation manager
	Utilities sponsor (EDF)

Appendix – Themes

Theme	Who we spoke to
Logistics	Logistics Operations Manager, LOCOG
	Logistics Procurement Manager, LOCOG
	Tilbury Site Manager, LOCOG
	Logistics Manager, Olympic Village
	LOCOG sustainability team
ESM	Staff at sponsor showcases on the Olympic Park
	Staff in kitchens at a range of venues (working for Amadeus, Aramark, Sodexo, Sodexo Prestige)
	LOCOG Sustainable Venues Team
	Logistics managers, procurement and warehouse staff
Look and Feel	LOCOG Look and Way Finding Manager
	ICON Manager
	ICON Legacy/Recycling Officer
	LOCOG Sustainable Venues Team
	LOCOG Sustainability Projects Manager
Transport and Accessibility	LOCOG Sustainable Venues Team
	LOCOG Accessibility Manager and Coordinator
	LOCOG Last Mile Coordinator and Games Makers at the Excel Centre
	LOCOG Last Mile Coordinators for the Mall / HGP
	LOCOG Spectator Mobility Services Staff and Games Makers at a range of venues
	LOCOG Central Planning manager – Event Services
	Secure Cycle Parking supervisors
Last Mile	LOCOG Last Mile Coordinator and Games Makers at the Excel Centre
	LOCOG Last Mile Coordinator for The Mall / HGP
	LOCOG Venue Sustainability Advisors
	Transport Hub Managers, Lee Valley White Water Centre
Games-time Communications	N/A

Appendix – Venues

Venue	Who we spoke to
Olympic Park and Village	LOCOG Sustainable Venue Manager and Advisors
	LOCOG Catering, Cleaning & Waste Manager
	SODEXO Prestige
	Amadeus front of house caterers
	Aramark Village Manager
	SODEXO chefs
	McDonalds Olympic Park Manager
	Head of OBS (London)
	Village Catering, Cleaning & Waste Manager
	North Park Catering, Cleaning & Waste Manager
	Catering, Cleaning & Waste Manager, Riverside Arena
	Venue operational managers
	Venue energy managers
	LOCOG energy conservation manager
	Utilities sponsor (EDF)
	Logistics Manager, Olympic Village
	LOCOG Look and Way Finding Manager
	LOCOG Accessibility Manager and Coordinator
	LOCOG Spectator Mobility Services Staff and Games Makers
	LOCOG Central Planning manager – Event Services
Box Hill	LOCOG Head of Sustainability
	Cleaning staff
ExCel	Olympic East Cluster Sustainability Manager, LOCOG
	Catering Cleaning and Waste Manager for ExCel
	LOCOG Last Mile Coordinator and Games Makers
Earls Court	LOCOG Sustainable Venue Advisor
	LOCOG Catering Cleaning and Waste Manager
	Catering Manger for incumbent caterer
Greenwich Park	LOCOG Sustainable Venue Advisor
	LOCOG Look Manager for Greenwich Park
	Sodexo Prestige Hospitality Manager

Appendix – Venues

Venue	Who we spoke to
Hadleigh Farm	LOCOG Venue Sustainability Manger
	Secure Cycle Parking supervisors
LVWWC	Transport Hub Managers
	Secure Cycle Parking supervisors
	LOCOG Sustainable Venue Advisor
Lords	LOCOG Sustainability Assurance Manager
	LOCOG Catering, Cleaning and Waste Manager
	Venue Waste Manager
Other Stadia	N/A
Live Sites	Head of Events, Live Nation (Hyde Park and Victoria Park)
	GLA London 2012 Sustainability Manager
	Event Manager, Picture on Potters Field
Wimbledon	N/A
HGP	Venues Sustainability Manager, LOCOG (Test Event)
	Venues Sustainability Advisor, LOCOG (Games-time)
	LOCOG Last Mile Coordinator
Hyde Park	Secure Cycle Parking supervisors
North Greenwich Arena	N/A
RAB	Venues Sustainability Manager, LOCOG (Test Event)
	Venue General Manager (Test Event)
	Venues Sustainability Advisor, LOCOG (Games-time)
The Mall	LOCOG Venue Sustainability Advisor
	LOCOG Last Mile Coordinator
Wembley Arena and Stadium	N/A
Weymouth	To be completed

Footnotes

- 1 For example, in May 2012 Wembley Stadium offered fish and chips for £7.80, Lords sold the dish from £8.00 and LOCOG advertised that its fish and chips would be priced from £8.00. LOCOG sold fish and chips on the Park at £8.50.
- 2 <http://www.cslondon.org/2012/09/commission-statement-on-allegations-of-excessive-food-waste/>
- 3 <http://www.guardian.co.uk/news/datablog/interactive/2012/apr/02/energy-use-map-electricity-gas>
- 4 All UPS vehicles are compliant with Euro 5 (2008/9) directive for light passenger and commercial vehicles
- 5 http://www.cslondon.org/downloads/2010_Waste_Review.pdf
- 6 http://www.cslondon.org/downloads/CSL_Biodiversity_-Review.pdf
- 7 Between 1st July 2012 – 9th September 2012
- 8 <http://www.cslondon.org/sustainable-games/>
- 9 <http://www.youtube.com/watch?v=wHS4AG7XJsY>
- 10 <http://www.london2012.com/venue/excel/>
- 11 <http://www.excel-london.co.uk/about-excel/media-centre/excel-news/excel-london-becomes-first-private-venue-to-achieve-bs8901-iso14001/>
- 12 <http://www.visitleevalley.org.uk/en/content/cms/london2012/lee-valley-white-water-centre/>
- 13 <http://www.london2012.com/venue/lee-valley-white-water-centre/>
- 14 <http://www.cslondon.org/sustainable-games/venues/>
- 15 <http://www.london2012.com/venue/lee-valley-white-water-centre/>
- 16 <http://www.visitleevalley.org.uk/en/content/cms/london2012/lee-valley-white-water-centre/>
- 17 <http://www.london2012.com/news/articles/2011/08/beach-volleyball-sand-to-be-used-across-london.html>
- 18 <http://www.london2012.com/venue/hyde-park/>
- 19 <http://www.london2012.com/paralympics/venue/the-royal-artillery-barracks/>
- 20 <http://www.cslondon.org/sustainable-games/venues/>
- 21 <http://www.london2012.com/venue/wembley-arena/>
- 22 <http://www.london2012.com/venue/wembley-stadium/>
- 23 <http://www.london2012.com/venue/wembley-stadium/>



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