CASE STUDY: Olympic Deliver Authority – London 2012 Olympic Park

SECTOR TYPE: Infrastructure – sports / housing / public amenity

LOCATION: East London

CLIENT: Government / Olympic Delivery Authority

PRINCIPAL DESIGNER: Various

PRINCIPAL ENGINEER: Various

PRINCIPAL CONTRACTOR: Various

CONTRACT VALUE: £9.3bn

CONTRACT DURATION: 2005-2013

The Project

While the London 2012 Olympic Park has been designed to meet the requirements of the Olympic and Paralympic Games, the main focus has been on post-2012 use. The aim has been to only build permanent venues where there is a long-term use, not leaving ‘white elephants’, and being creative in the use of temporary venues and seating.

The Olympic Village, the sporting venues, new transport services, supporting facilities and the Park itself have been designed to leave a lasting social, economic and environmental legacy, while minimizing any other adverse impacts during the design and construction.

The challenge of climate change has been addressed through minimizing the carbon emissions associated with the development.

The remediation of the site involved bringing existing land back into public use and creating significant improvements in the quantity and quality of green space in east London. 100 hectares of green spaces have been created which are designed to reduce the risk of flooding in the river valley and enrich the biodiversity of the Lower Lea Valley (45ha of biodiversity-rich parkland).

The contribution of having sustainability at the heart of the project brought tremendous benefits, not only in terms of environmental and social benefits, but also in terms of cost savings.
The Benefits

The examples below show how environmental, social and economic benefits have been achieved, and how these are complementary rather than mutually exclusive:

- The decision to remediate heavily contaminated soil on site, rather than send it to landfill saved approximately £68 million.
- Velodrome – The cable net roof design is lighter weight, uses around a tenth (150 t) of the steel used in more traditional options and is quicker to put up (6 weeks vs. several months). It has enabled other parts of the structure to be designed for reduced loads, producing a saving of approximately £5.8 million (15%) due to a reduction in the depth of foundations needed.
- Using gas generators (manufactured and supplied by a Scottish company) instead of traditional diesel generators reduced CO₂ emissions by 10,552 tonnes (22.2%) and provided a cost saving of around £13 million.
- Olympic Village – with over 2800 homes to be constructed with an average carbon emissions reduction of around 83% when compared to a typical building regulations compliant apartment. This equates to an average annual saving per apartment of 1.5 tonnes CO₂ or £237 saving at current energy pricing.
- Concrete procurement strategy – In total 257,000m³ of concrete was poured, reducing embodied carbon emissions by approximately 50% and avoiding approximately 35,000 lorry movements from local highways; equating to a 40,000tonne reduction in vehicle CO₂ emissions over two years of operations.
- Employment – To date 148 people have undertaken bespoke employer lead training linked to jobs on the Athletes Village with 109 securing a job and career route. BeOnsite has delivered over 90 apprenticeships within these areas and other core trades and the on-site brokerage team have filled 535 jobs for local people. As of June 2011 24.2% of the workforce on the Athletes’ Village were from the Host Boroughs – 3323 people altogether.

The Process

The principles that led to the success of the project:

- Buy-in from the top and consistency of leadership – senior management believed in it, owned it, and kept it on the agenda.
- Specific, clear, and challenging sustainability targets were set from the outset in pre-procurement, tender documents and contracts, that allowed for innovation.
- Time taken at the start to plan rather than rushing in to the actual build or ‘doing’ phase – including the importance of design and aesthetics as much as thinking about sustainability.
- Defining the scope, budget and funding early and sticking to it, making sustainability a key core driver at the same level as meeting budget and delivery objectives.
- Getting the right people with the right practical skills (delivery capability) on board fast.

Key Learning Points

The construction of the Olympic Park has been a huge success. It provides a first-class example of a publicly-funded programme delivered on time and within budget, at the same time as delivering a collection of world-class, highly sustainable venues. Drawing on the Olympic Delivery Authority’s (ODA) knowledge and expertise from industry and academia, the lessons on how this was achieved have been distilled into the 12 principles highlighted. The majority of these principles will be readily transferable to most other major infrastructure projects, and the more of them that are applied, the greater the chance that those projects too, will deliver on time and within budget.

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