

**PROJECT FOCUS:**

>LONDON 2012 OLYMPIC AND PARALYMPIC GAMES

# LET THE GAMES BEGIN

*After years of preparation, the finishing line is in sight for Laing O'Rourke and its CLM joint venture partners – and the team will settle for nothing less than the gold standard. By **Mark Smulian**.*





**WITH THE EYES OF THE WORLD ON THE UK FOR** the London 2012 Olympic and Paralympic Games, it isn't just the athletes expected to set new standards of excellence. The British construction industry, spearheaded by the Olympic Delivery Authority (ODA) and its delivery partner, CLM, is set to achieve one of the most complex feats of programme management ever undertaken. Once a derelict and polluted wasteland of 670 acres, the Olympic Park in Stratford, East London, has been delivered on time and to agreed budgets.

With no question that this collaborative effort has already set new industry benchmarks, the time to fully reflect upon and celebrate the achievement will have to wait a little longer yet. For Laing O'Rourke – one third of the CLM joint venture with CH2M Hill and Mace – the pace must be maintained until well after the athletes' moments of glory. The heartbeat of the operation for seven years, since planning began in 2005, Laing O'Rourke will remain on the Olympic team until autumn 2012, when the temporary infrastructure is removed.

As millions prepare to descend upon the capital and put the venues to the ultimate test, the pressure is on. False starts are not an option.

### **Delivery of many services**

One month before the Games began, Laing O'Rourke's Dave Peacop – officially the director of Park operations; to colleagues, "the mayor of the Olympic Park" – was as busy as he had been for seven years.

"Laing O'Rourke, as part of the CLM team, has been a programme and construction manager, plus a first-tier supplier in the delivery of construction and operation services," he says. "You name it, we supply it 24/7 – security, transport, bus services, environment services, waste management, fuel, incident management, temporary utilities, traffic management, rail and waterway build and operations, and temporary infrastructure construction – plus, most importantly, health and safety management and assurance."

Key to managing the programme and protecting the client's reputation has been maintaining relations with the Park's neighbours and its stakeholders, such as the five host boroughs, Network Rail, Crossrail, Westfield shopping centre and the major utilities companies. In addition, the team has worked hard to win over the local community with a 24/7 community hotline, as well as weekly consultation sessions. Laing O'Rourke has led "good neighbour" activities, including assurance reviews for perimeter construction works.

Of course, acting on issues, and not merely listening to them, is critical. Public feedback has led to altered construction methods, such as bored piling instead of pile driving to reduce noise, and switching off vehicles' signal lights at night. Contractors causing dust or noise pollution can expect to be closed down until Dave is confident the issue has been rectified.

This approach runs right through the work, with the ODA specifying the highest standards of safety and sustainability, and stringent economic targets for the proportions of apprentices and local people employed.



## PROJECT FOCUS:

>LONDON 2012 OLYMPIC  
AND PARALYMPIC GAMES

### Logistics prove critical

With nine venues constructed across the Park, plus the adjacent village and shopping centre, CLM's careful co-ordination and integration has ensured that work on one building has not impeded another. "In seven years, through rain or snow, the Park has never closed," Dave recalls. "We have facilitated 11,000 construction workers per day, safe passage around the Park and an average of two deliveries per minute onto the Park – and we even learned how to lay blacktop in the snow."

The safety record is another remarkable achievement: Dave sports a jacket hailing a million working hours without a reportable incident. The project was awarded the RoSPA Diamond Jubilee Award, and the Park operations team is proud of twice being a winner of gold awards from the Considerate Constructors Scheme.

Work ended in early June to allow for a massive clean-up before the site locks down for final preparations ahead of the opening ceremony.

"The bulk of work in the run-up is finishing all the security to the edges of the Park," Dave says. "Temporary infrastructure is altered and a complicated transition to the permanent security is needed for the Games. This requires managing change, while facilitating the movement of 10,000 people in and out of the Park each day."

During the Games, Dave will be one of three general managers accountable for 220,000 people on the Park, and 20,000 volunteers. His 24/7 control room will have some 100 staff, plus police, fire and ambulance support and ultimately a facilities management team largely drawn from Laing O'Rourke, in operation from 1 July til mid-September.



**COLLABORATIVE EFFORT:**  
Laing O'Rourke's  
Caroline Blackman  
and Dave Peacop  
in front of the main  
stadium

"LOCOG [the London Organising Committee for the Olympic Games] has chosen the people who are best at doing the job," Dave says. "Whether it's a utility disaster or road traffic incident, we have to be there 24/7 to fix it. This is testament to the London 2012 Park Operations team as a whole."

Caroline Blackman, head of Organisational Development at Laing O'Rourke, points out: "We've moved into an unusual place where we are operating some of the assets during Games mode, and will have managers in all the main venues and across the common domain [parkland] to make sure they are maintained and protected. It is important that we prevent damage or alteration to the assets – they are, after all, publicly owned, and will be handed back after the Games."

### Venue-specific learning

If you are lucky enough to attend an Olympic event, the sporting activity itself will make up only part of the experience. The venues have been fine-tuned to perfection, from tweaks to light and sound systems, to changes to signage and toilet provision. With no room for error when the Games go live, CLM led tests during construction, involving thousands of people to ensure that each venue works as intended.

## A SUSTAINABLE GAMES

London 2012 was planned as "the world's first truly sustainable Olympics". Laing O'Rourke had to think hard about how materials were procured, delivered and used.

Sustainability rules applied to everything. For example, all timber had to come from sustainable sources; recycled glass was crushed into concrete, which was itself made onsite to reduce delivery vehicles' movements; more than two million tonnes of soil was cleaned; and over 2,000 rare newts were relocated.

Another success has been a 99.1 per cent reuse and recycling rate – so high that compensation

had to be paid to a waste contractor who could not collect sufficient materials.

Showing the attention to detail, PVC was certified free of phthalates, a chemical additive highly dangerous for the environment.

Dave Peacop says: "We had deliveries by water to our own berth here and a huge railhead for aggregates, so that 56 per cent of materials were delivered by water or rail.

"Everyone laughed originally at the idea when we said we could do that. Everyone underestimated what could be achieved."

“You don’t know how venues will perform until people are in them,” explains venue stream project leader Abby Green. “Before that, you’ve been working to a theory. For example, the Velodrome performs differently when occupied to unoccupied; the tests allowed us to optimise the sound experience.”

Feedback from the sporting bodies also saw the Basketball Arena’s back-of-house athlete facilities roofed over, and air movements reduced at the Velodrome.

The venues’ specific intricacies and different structures meant the same approach could not be taken for each. For example, at the Royal Artillery Barracks it made sense to leave until last the erection of a 25-metre fabric screen, which limits the spread of lead shot during the shooting.

“It’s quite imposing on the local landscape and we didn’t want it up all winter; this way it could be designed and installed when needed,” Abby explains.

At the Eton Dorney Rowing Centre, CLM had to work around events at nearby Windsor racecourse and the rowing lake almost until the last moment. Abby says: “We want to work alongside these key stakeholders and minimise the impact of the Games on their ongoing operations.”

Frank Randles was project manager on the temporary Water Polo Arena and the Handball Arena, now renamed The Copper Box as the local legacy leisure centre. Working with a number of organisations from other industries, his complex task illustrates valuable transferable skills Laing O’Rourke takes back into the business.

“The Water Polo Arena was planned to start last as its area was previously used in the construction of

**IN NUMBERS:  
OLYMPIC  
VENUES**

**15,000**

Athletes competing at the Olympic and Paralympic Games.

**88**

Number of light pipes in the Handball Arena ceiling that draw sunlight into the venue, reducing the demand for electric lights.

**10,000m<sup>2</sup>**

Size of the new lake at Lee Valley White Water Canoe Centre.

the Aquatics Centre, so it was potentially high risk because of the deadline,” he says. “There were seven contractors, and those for the temporary structure, seating and the pool were not familiar with the construction environment, so there was quite a steep learning curve there for them.”

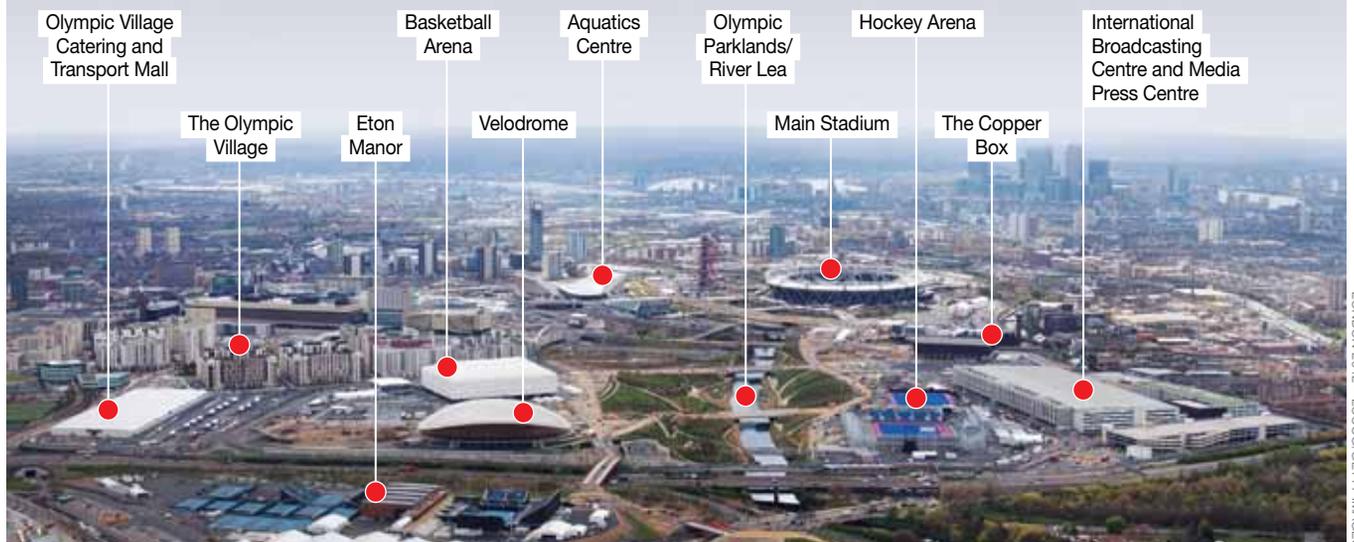
**Race against time**

Laing O’Rourke planning leader Mark Kelly, seconded to CLM as scheduling project manager, and his team have led the development of timelines for the design, procurement and installation of all temporary venue facilities: at Stratford; 22 other competition venues across the UK, including Wimbledon, the O2 and Weymouth; and over 50 non-competition projects, from ceremony rehearsal to athlete training facilities.

“When we arrived, the Park base build was well progressed but the venues off the Park were mostly still in the design-and-consent stage,” he says. “This is the most ‘temporary’ Games ever. It was part of the bid that venues were reused or temporary so we aren’t left with a lot of white elephants. In many respects, this has made the build programme much more challenging.”

To provide the detail required by LOCOG to keep the programme running smoothly, Mark’s team developed end-to-end programmes containing over 65,000 operations. Wimbledon, like several other venues, proved a particular challenge in terms of the timescales available to construct; LOCOG gained possession only after the annual tennis championship in early July – a tight window to transform it into an Olympic venue. →

**OLYMPIC PARK, STRATFORD**



LONDON 2012 - LOCOG/GETTY IMAGES

## PROJECT FOCUS:

>LONDON 2012 OLYMPIC AND PARALYMPIC GAMES



Transforming a tennis venue for Olympic tennis might sound relatively straightforward, but the event must comply with stringent Olympic Broadcasting Service requirements around cabling, resilient power and camera platforms. Scoring technology and video boards can differ too and all-important Olympic branding must go up.

Mark's 30-strong team has also planned operational milestones, such as when to go live with accreditation and workforce catering: "This isn't the construction industry as we're used to it, but event management – and that industry does things differently.

"We've had very short timescales to mobilise and deliver and have learned a lot from their innovative approaches to installing their commodities. There's a lot of pre-assembly and installation that doesn't need handling equipment or working at height."

### The home straight

After the Olympics, there will be a short period for preparations for the Paralympic Games – notably removing the BBC's broadcasting structures and replacing them with those of Channel 4. Then, after the Paralympics closing ceremony on 9 September, comes the "bump out": with just six weeks until the London Legacy Development Corporation takes over, down come all the tents – the largest of which needed eight cranes to erect – and temporary facilities, including footbridges and catering concessions. Time for another organisational feat.

"My first job will be to reopen the 'lifeline' – the main road into the Westfield shopping centres – which

**FIRST-TIER SUPPLIER:**  
A large team has programme managed work at Stratford – and further afield. (Clockwise from above) Frank Randles; Abby Green; the Royal Artillery Barracks in Woolwich; Eton Dorney near Windsor; and the Velodrome at the Olympic Park

we must do in nine days, removing all the fencing and security items either side of it," Dave says. "We then have to bump the whole place out – with 10,000 wagonloads of materials containing tables, chairs, TVs and sporting and broadcasting equipment leaving the park safely in two weeks."

### A transparent trail

Simultaneous to the activity taking place at Olympic venues, Laing O'Rourke's commercial staff have been busy behind the scenes closing out some 120 contracts.





## IN NUMBERS: OLYMPIC VENUES

**200km+**

Length of electrical cable put into two 6km tunnels built under the Park.

**300,000+**

Plants that were planted in the Olympic Park's wetland areas.

**53m**

Height of the Olympic Stadium.

**2,400**

Concrete columns in the ground of the Aquatics Centre to create the foundations.

**1.8km**

Length of new sewers installed in the Olympic Park.

LONDON 2012 - LOO09/GETTY IMAGES

LONDON 2012 - LOO09/GETTY IMAGES

Formerly CLM's head of procurement, Paul Dickinson is now ensuring that the ODA has a transparent and auditable procurement trail, that must be capable of being defended to [Parliamentary spending watchdog] the National Audit Office (NAO). This process allows contractors to demonstrate compliance with their obligations down their supply chain.

Paul says: "This process clearly explains, 'this is what we set out to procure, this is where anything changed and these are the reasons for any increase or decrease in cost'."

This process is not itself part of the NEC contract, although Paul thinks it would be improved if it were.

"We need to be sure when someone comes in from the NAO and reads the documents for the first time, they can understand them. It takes skill for people to draft documents that way," he says. "Increasingly, clients don't want buyers as such, but people with a greater understanding of all associated functions, so in procurement you have to think like a project manager, like an engineer, like a lawyer and like a planner, so we can make informed decisions for a client.

"Even then, NEC contracts have to account for changes and timescales, all of which need to be actively controlled so the client knows why the end costs or deliverables are different."

### Leaving a legacy

All involved in the Olympics have learned much and massively developed their professional skills: from safety and sustainability, to organising and validating complex processes.

Caroline says: "We have been working with the ODA on the Learning Legacy campaign. As CLM, we will be doing a major legacy-learning exercise after the Games, so we collect as much information, data, lessons learned and case studies as possible for Laing O'Rourke, the parent companies and the industry at large."

With the UK construction industry ready to take centre stage for its Olympic achievements, the team forming the backbone of the Games must remain as focused as ever for the home straight. "The public will be enjoying the venues and the supporting facilities of the park, but will not see the vast quantity of infrastructure that makes the whole thing possible," Dave concludes. "I've learned an awful lot here, in particular about 'look and feel' – the difference between what the public can see, and what is actually there behind the scenes.

"When the Games go live, we will be there, ensuring everything works, is doing its job, out of view. It makes me proud to know that our role has and will form such an important part of this world event and creating a legacy for the future." ●

### FOR MORE INFORMATION

**Caroline Blackman** [cblackman@laingorourke.com](mailto:cblackman@laingorourke.com) +44 (0)7778 519781

**Dave Peacop** [dpeacop@laingorourke.com](mailto:dpeacop@laingorourke.com) +44 (0)7769 886295

Read more about some of the Laing O'Rourke employees who worked on the London 2012 Olympic and Paralympic Games programme, coming soon to [www.infoworks.laingorourke.com](http://www.infoworks.laingorourke.com)