



LONDON GAMES –
GOLD MEDAL PROJECT DELIVERY

Report of seminar 156 held on 12th May 2010
at CBI Centre Point, 103 New Oxford Street, London

SUMMARY

KEY CONCLUSIONS

- In introducing the seminar the Chairman said that the London 2012 Games had accelerated the legacy, such that development was being achieved in two years that would normally take two decades.
- The client had wanted something more effective to manage the programme of construction projects. Its solution was to procure a delivery partner using the competitive dialogue procedure. In response the delivery partner developed an online system to manage the governance and reporting, resulting in a two-page dashboard representing progress and risks. Monthly progress meetings have now reduced from 45 persons attending to just 6!
- The individual sites were reduced to three types: venues, linear and dispersed. As risks escalated, the visibility and resources devoted to them were increased accordingly. Regular informal meetings helped expose issues and provide early elevation.
- The 'soft' objectives of the scope were treated as mini projects in their own right and set quantifiable targets to track and measure successful outcomes.
- The Village residential complex of 2,800 homes presented its own unique challenges in that once the Games are complete this is a very large number to release to the market. A management company has already been set up and there is an objective to achieve a wide mix of occupancies.
- The combination of the Olympic Park and Village, and Stratford City required additional key interfaces for delivery, and each has been designed for a number of different timed uses.
- Because the cost of the Village (for its Games use and then modifications to later residential uses) is greater than its market value, bank funding for the affordable homes required government guarantees which were achieved through early informed knowledge from Olympic Delivery Authority (ODA) to Treasury.
- In building bridges across working rail lines and in very congested sites, a few keys to success were identified, namely: strong stakeholder engagement where no direct contractual contacts existed, focus on end-user needs, understanding the drivers and contingency planning. Often the end-user needs are not in the formal scope, but attention to them helps critical stakeholders.
- Two lessons from running transport operations in Vancouver: the media arrive a few weeks before the opening ceremony and can only report about the services they are experiencing; during the operations you need flexible and dynamic responses on an hourly basis.
- The Energy Centre was designed, procured and constructed simultaneously with the building built later around the generating plant. More design time and greater collaboration with the professional teams would have been better.
- In order to keep electricity supplies continually available throughout the Games it was necessary to start planning operational readiness early, develop a dedicated team and test, test and test again, with lockdown of kit six weeks prior to the Games.

These are the views of Malcolm Noyce, Executive Director, MPA

Chaired by Joe Duckworth, Chief Executive of the London Borough of Newham, this full day seminar was one of the MPA's annual events where progress towards the London 2012 Games is monitored.

With more speakers than usual, the event covered a wide range of topics, including the role of the delivery partner; delivery of the Olympic Village and its legacy use; the innovative Energy Centre; leading edge construction of infrastructure; Stratford City; safe logistics; facilities management; security; and IT.

Delegates heard how many of the challenges faced have been unique, with valuable lessons to be learned which could be transferred to other major projects.

ROLE OF PROGRAMME MANAGER/DELIVERY PARTNER

CLM, a consortium made up of CH2M Hill, Laing O'Rourke and Mace, was selected as the delivery partner for the Olympic Delivery Authority (ODA) in August 2006 to deliver the infrastructure and venues for the London 2012 Games.

This presentation looked in detail at the role of the delivery partner, which embraces the ability to manage at programme and project level as well as operate in construction delivery roles. Contractual programme and project management services include:

- Health and safety assurance
- Cost planning/management
- Schedule management
- Design management
- Risk management
- Project controls
- Reporting
- Overall programme assurance
- Sustainability/environment

While working on an Olympic programme is distinctive, the disciplines of programme management remain the same. It was explained how the complexity of the programme provides a challenge to the delivery team in terms of stakeholder management, the scope of the infrastructure and venue projects, and the level of integration required between projects and external stakeholders.

Critical factors in controlling the programme include managing change and understanding what impacts delivery. The presentation explored the importance of the systems and processes used, the aligned culture of delivery and a philosophy of 'no surprises'. For instance, incentivising contracts gave an objective-driven organisation and a 'can do' culture, whilst the detailed logistics strategy had total focus on cost, time-driven key performance indicators and a robust structure.

Success to date can be attributed to being able to drive performance through the supply chain and work seamlessly with the ODA.

The ODA is responsible for providing all the new venues, infrastructure and utilities on the Olympic Park, a programme involving £7 billion of construction work to be delivered in four and a half years. The ODA looked at the process involved at achieving this goal, under budget and ahead of time, on a site with difficult and restricted access. Focusing on the logistics project behind the construction of the principal venues and infrastructure, the presentation set out to provide an overall impression of the scale and complexity of the construction effort and support functions.

The challenges of working on such a large and complex construction programme were outlined. Surrounded by a densely populated road network and narrow streets, the original site area was intersected by waterways and railway networks, and much of the land was contaminated. There were numerous bridges in a poor state of repair and around 300 buildings had to be demolished. Part of the logistics effort was the construction of 11 temporary bridges simply to be able to move plant, equipment and people around the site.

The ODA's defined purpose for the project was to manage people, materials and equipment, and put order and certainty into uncertainty. The aims were to modify the impact of the workforce, and regulate the flow of traffic and the site working arrangements. The project was demand-led, in that everything done was in response to the needs of the Tier 1, 2 and 3 contractors, suppliers, haulage companies and others with an interest in working on or going to the site.

Following the appointment of CLM as delivery partner, the ODA created a joined-up integrated logistics team. Working together was something that underpinned all activities in order to make the logistics project a success. It was noted that various new tools and techniques of commercial and technical evaluation have been developed to support the project, many of which constitute an exploration into new project management territory.

The Olympic Village will occupy the first phases of the residential component of the Stratford City Regeneration Scheme, which was granted outline planning permission in 2005 before London secured the Olympic and Paralympic Games. The overall development has spread to the east and now sits within the much larger area of the Olympic Park and all the venues. The opportunity is there to make the Olympic Village and Stratford City work as an integrated development and the primary legacy of the London 2012 Games.

In this presentation the ODA looked at the procurement structure, funding and delivery of the Village and the proposed use of the area post-Games, which will include a mix of residential and public buildings.

Accommodation in the Athletes Village will comprise 11 residential plots, with 62 blocks of residential units. There will be 16,760 bed spaces during the Games, and 4,500 for the Paralympics. After the Games 18 months of retrofit work will be carried out to make 2,818 residential apartments, town houses and retail space. The areas around the apartment blocks will be landscaped with public open spaces and a network of segregated paths and roads, which are to be delivered by the Stratford City sub-programme. Energy efficiency and sustainability are major drivers in the delivery.

The housing will consist of both affordable rented and shared ownership dwellings, as well as open market homes. Alongside will be an all-ages Academy specialising in the Performing Arts and English, a day care centre, a polyclinic, playing fields and an 850-space multi-storey car park located adjacent to Stratford International station. A variety of community facilities will be built for the Games and post-Games, with playing surfaces and associated fixtures such as floodlighting, landscaping and street furniture.

Work on the Olympic Village is going according to schedule and is on target to finish in the summer of 2011.

STRATFORD CITY: INTERFACES

The Westfield Stratford City project will become one of UK's largest retail-led mixed use developments. The scheme lies alongside the Olympic Park and Village and is part of the 700-acre Stratford Masterplan.

Due to the intrinsic nature of the site and the proximity to the Olympic Park, the project is impacted by numerous 'interfaces'. The presentation from Westfield Shoppingtowns looked at some of these interfaces, Stratford City's relationship with the London 2012 Games and the wider stakeholder community, and ambitions for the future. It also provided an overview of the project, examining some of the geographical and physical constraints of the site, the background and context, and how the Games has influenced delivery and operating issues.

For instance, site interfaces are numerous: the site is intersected by a number of existing railway lines, and these together with the new infrastructure works will mean that the area becomes a new transport hub for London. During the Games it is estimated that about 70% of the spectators will be travelling through the shopping centre to access the Olympic Park. However, these railway lines created a number of challenges – for instance, several bridges had to be built to provide access and utilities.

Stakeholder interfaces have been many and varied – from local groups and boroughs through to the London Organising Committee for the Olympic Games (LOGOG), the ODA, transport authorities and the Government. Effective organisation of processes, services and teams to meet the management and coordination demands of these interfaces has been a key feature of the project. For example, infrastructure delivery involved major coordination with the rail authorities, as there were adjacent ongoing railway projects in both the Athletes Village and the Olympic Park.

As well as the Westfield shopping centre, Stratford City will also include a health centre, a police station, a residential component and a Retail Academy. This Academy will provide a permanent facility, offering training for people seeking a career in retail: by the time the shopping centre opens it is hoped that some 3,000 people will have received training.

BUILDING BRIDGES

This presentation from Morgan Est provided a contractor's perspective on delivering the infrastructure required for the Olympic Park, the Olympic Village and the Westfield Stratford City development.

It focused on the building of two of the key bridges: the first (bridge 17) is a 10-metre wide pedestrian bridge which passes over the 11 railway lines that feed in and out of Stratford station. Its main purpose is to allow pedestrians to get across what is effectively a barrier between the existing town centre of Stratford and the new Westfield development and the Olympic Park.

The second bridge (bridge 20), is a single bow-arch bridge linking the Athletes Village to the Olympic Park. Spanning the High Speed 1 railway line and a freight line, during the Games it will be heavily used by pedestrians, but after the Games its main purpose will be as a road traffic bridge.

Using 'push-launch', a method now regarded as a gold standard for bridge building, both bridges were delivered on time, but faced numerous challenges along the way. These challenges included dealing with multiple stakeholders and multiple clients, all of whom had to be aligned to allow Morgan Est to deliver innovations to ensure the success of the project. The session looked at some of the delivery difficulties encountered, and the innovations and actions taken to ensure a successful outcome.

The following points were highlighted:

1. Understand the customers' needs at all times – they are not always what was initially asked for, or what is written in the scope or the contract.
2. Maintain the focus on delivery – believe that in spite of difficulties it can be achieved, and do not get distracted by minor details.
3. Make stakeholder management an integral part of the job, especially on very complex projects – otherwise the cooperation or approval to use initiative to deliver on time may not be forthcoming.

Transportation management for the Vancouver 2010 Winter Olympic Games was managed by the Vancouver Organising Committee (VANOC). It consisted of five operational units: human resources; transportation operations; transportation systems; transportation planning; and partner integration. In this presentation VANOC focused on the partner integration strategies used to create a comprehensive operational transport team for the Games, highlighting key challenges and lessons learned.

Some of the partnership organisations were outlined. For example, in 2007 VANOC initiated the Olympic and Paralympics Transportation Team with the remit to devise particular baskets of work for which each of the partners was responsible. Core members included:

- VANOC
- Ministry of Transportation
- City of Vancouver
- Resort Municipality of Whistler
- TransLink
- British Columbia Transit
- Vancouver 2010 Integrated Security Unit

Another of the partner touch points was integration with the master planning process. This looked at key urban areas and, for example, plotted on a map where many of the activities of the Games would take place and the possible street blockages.

Some of the pre-Games transport challenges experienced were outlined. For example reductions in budgets impacted on operational planning and schedules, whilst delays in funding resulted in pauses in workforce hiring programmes. There were also instances of inadequate decision making and a lack of clear operational roles and responsibilities.

On the plus side, some very well coordinated partner operations became apparent during the Games. For instance the Transportation Demand Management programme led by transport providers in Vancouver achieved a 30% traffic reduction target, and along with the use of IT and CCTV the Traffic Management Centre worked perfectly. Venue transportation managers integrated very well with the venue teams to make sure everyone understood the challenges and could coordinate a response.

Facilities management (FM) services for the Olympic Park are focused on two core priorities: first to ensure the ODA built assets are properly maintained for effective handover to the legacy stakeholders, and secondly that the buildings can support LOCOG's licensing requirements and enhanced service provision during the test event and Games periods.

The ODA explained that they have a clear mandate to deliver facilities management alongside their other responsibilities. The FM remit concerns the hard facilities management, which involves the maintenance and care of the venues and Athletes Village, including air conditioning, electric power, plumbing and lighting. The soft FM such as cleaning, security and logistics will, in the main, be delivered by LOCOG.

Although the FM encompasses a narrow band of responsibility, it still presents unique challenges requiring unique solutions. The presentation outlined the scope, preferred procurement route and the approaches taken to ensure that FM services for the Games are delivered effectively and the venues are handed over to the legacy stakeholders in an appropriate condition.

The Olympic Park asset portfolio is broad, with sports venues of capacities varying from 5,000 to 80,000, the 2,800-unit residential development in the Olympic Village, plus media and broadcast venues. One of the challenges is the fact that the ODA is responsible for the management of this wide-ranging portfolio for only two to three years: an FM company would normally expect a contract to last for at least five, or even as long as fifteen years. In addition, the stakeholder relationships are complex.

The demand for FM is expected to start on a phased basis from January 2011. It will increase through the testing and live events prior to the Games, followed by enhanced provision which will reach a sustained maximum throughout the duration of the Games. This means that the FM service providers have to be able to flex their services from a relatively low level caretaker phase during the test events through to the busy and critical period of the Games themselves. This intensive period will be without the benefit of a regular pre-Games programme in which to test plant, systems and staff.

THE ENERGY CENTRE – SUSTAINABLE POWER

Cofely East London Energy (CELE) is responsible for supplying both heating and cooling to the London 2012 Games venues, the Athletes Village and the retail development at Stratford City. The project is a 40-year concession, therefore responsibility will continue as part of the legacy long after the Games have finished. This presentation outlined the aims, challenges and benefits of the project, which commenced in April 2008 with the signing of the Concession Agreement.

The project includes two Energy Centres, one at King's Yard and one within the retail development, which are due to be completed by late 2010. The first phase capacities are for the Games themselves, and include energy networks which comprise 20 km of pre-insulated steel pipework.

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The Energy Centres incorporate low-carbon technologies as part of the combined cooling heat and power plant that will capture the heat generated by electricity production. In this trigeneration scheme, electrical power and heat are produced by a gas/biofuel-fired combined heat and power engine. Heat not required for heating and hot water is used to drive an absorption chiller. The heating and cooling networks have been designed to minimise losses. The result is a highly efficient method of generating power, resulting in energy cost savings and lower carbon emissions compared to conventional methods, and contributing to the 20% renewable energy target across the Games Park.

The Energy Centre buildings have been designed to utilise recycled materials such as steel and wood. The modular design means there is flexibility to remove the external panelling after the Games to carry out any required alterations for legacy use, such as bringing in additional boilers.

LESSONS FROM ELECTRICITY PROVISION TO THE PARK

Around 90% of the Olympic venues and facilities are situated in and around London, with the remainder spread across the UK, from Weymouth to Scotland. This presentation from EDF Energy considered the coordination of all public electricity supplies on behalf of the Olympic authorities. It looked at the planning and project management required to ensure that there are adequate resources, facilities, plant, equipment, systems and processes to enable the Games to proceed without any incidents that could affect electricity supplies to the Olympic venues or facilities.

It also outlined the planning that is being undertaken to minimise the impact of the Games – especially the effect of the Olympic Route Network (ORN) in London affecting ‘business as normal’. Project planning was started early, and included exploring best practice and lessons learned from previous Games and categorising essential circuits. For instance a lesson learned from the Vancouver Games is to ensure there are no construction works on or near the network both during the Games and six weeks beforehand.

Prior to the redevelopment of the site for the Olympic Park, the old electrical distribution infrastructure needed to be removed and provisions made for temporary builders’ supplies. Extensive tunnelling works were required to divert the overhead power lines, as well as significant reinforcement of the surrounding electricity transmission and distribution networks. A new primary substation has been designed, constructed and commissioned to supply the Olympic Park load. This substation was the first ODA technical venue to be completed on site and it met its ‘power-on’ target date of October 2009.

Some of the challenges for early summer 2012 were outlined: for example only essential works will be permitted on the transmission and distribution network, and new connections will be impossible on or near the ORN. Planned maintenance will cease as operational staff concentrate on their Olympic readiness training.

The Chairman noted that the day had included useful discussion of high level and professional programme management, the pace of the Games programme, complexity of the projects and the deadlines to be met. In addition a number of lessons learned had emerged around the topics of governance, risk management, procurement and data management.

The importance of preserving and future-proofing the legacy, when the main focus is on delivering the Games themselves, is a particular challenge. Driven by the ODA and their prime contractors, delivery of the legacy requires a clear brief and a tight timetable.



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