

# HEALTH AND SAFETY ON LONDON 2012



Lawrence Waterman OBE  
Head of Health and Safety,  
Olympic Delivery Authority

## INTRODUCTION

The UK construction industry contributes disproportionately to workplace accidents and injuries – if London 2012 had mirrored the sector in 2005, there would have been approximately 500 accidents reportable under the RIDDOR regulations, many causing major injuries and permanent disabilities for the workers involved, and three fatalities. The “health” part of health and safety in construction has not historically been addressed adequately, which, taken with the predominately male and ageing workforce, has left a considerable gap in health management.

With time constraints and huge public scrutiny in an industry recognised for a poor health and safety record, the London 2012 programme presented great challenges to defy the statistical averages. From its formation the Olympic Delivery Authority (ODA) identified its aspiration – that the process by which venues and infrastructure for London 2012 were to be constructed should reflect the Olympic and Paralympic ideals and ensure the safety, health and welfare of the workforce. Another aim was to create a positive, lasting legacy, not just in bricks and mortar but also in raising the bar in health and safety performance. This is now expressed in the Learning Legacy website with

... ensure the safety, health and welfare of the workforce ...

independent research evaluations, case studies and tools.<sup>1</sup>

## COMMITMENT

The ODA placed health and safety considerations at the heart of management. The reasons for this focus were threefold:

- The ODA had a moral obligation to minimise harm to its workforce. There was a strong desire to prevent fatalities and ensure that everyone went home safely every day.

- Legally, the ODA had duties under the *Health and Safety at Work etc Act 1974*, and subsidiary legislation particularly the *Construction (Design and Management) Regulations*.

- Good management is responsible for managing risk – and the risks to the programme, including to the reputation of the ODA and its sponsoring Department DCMS, certainly encompassed the impact that serious accidents and/or work-related ill health could have.

It was unacceptable to work “business as usual” and suffer many accidents or ignore the health of workers on site. The ODA set its stretching benchmark as fewer than a RIDDOR-reportable accident for every one million hours worked and enhancing the well-being of the workers.

## STRATEGY

The overall objective was to unlock the abilities of suppliers to deliver excellence, it was recognised that the major companies that had bid and had been appointed as Tier 1

contractors had done so because they wished for the high profile intrinsic to participating in the London 2012 works. Those companies installed some of their best people. This was a supply chain that at the top was truly committed to an excellent health and safety performance. The challenge was to realise that commitment in practice.

In summary, the programme operated so that:

1. The design brief and specifications, procurement and the wording of contracts all reflected the ODA’s requirements. The adoption of a *Health and Safety Standard* developed through consultation with trades unions, industry bodies, HSE and professional institutions was an early achievement – for a client body to consult in order to confirm that what it was doing represented evidence-based best current practice was a major innovation.

2. Design management was used to drive the whole approach to “safe and healthy by design”.

3. On site there was a leadership programme, worker engagement and assurance through regular scrutiny.

## LEADERSHIP FOR HIGH PERFORMANCE

The ODA Leadership Board was chaired by the CEO and attended by the ODA Chairman, the Chairman of the Board SHE Committee, executive directors and members of the senior team for the Delivery Partner. The Board reviewed the strategy



and approved the initiatives being taken. Having made arrangements for this high level support, which was also evidenced by the senior staff participating in awards events on site and centrally, site tours and other engagements with each project, the focus moved to engaging the senior staff in the project teams.

A Safety, Health and Environment Leadership Team (SHELT) was formed with over 20 Tier 1 members each representing at the highest level the projects on the ground, together with senior staff from the Delivery Partner and three ODA representatives – Director of Construction and Heads of Health and Safety and of Environment. The leadership team was responsible for a wide range of very specific initiatives and innovations including:

- Banning unsafe equipment
- Establishing a mandatory supervisor course on leadership and behaviour
- Campaigns on electrical services timed for them going live

Agreeing Visual Standards and then using them to achieve good housekeeping

Ensuring that on every project there was a behavioural safety programme and really effective worker consultation

## DESIGNING FOR SAFETY AND HEALTH

Falls from height remain a major cause of fatal accidents. An illustrative case of the value of seeking better design is the Velodrome. The architectural form was driven by the sightlines of the spectators and directly related to the geometry of the track and this in turn created the special shape of the roof affectionately described as looking like a ‘Pringle’ crisp.



Cablenet roof design at the Velodrome

The initial concept design of the Velodrome roof consisted of a steel truss roof design. Although constructable this would have led to a significant amount of work carried out at height with temporary support structures installed. This would in turn have created significant health and safety risks for the construction workers and introduced long term maintenance risks for the operator of the venue to manage. Exploring alternatives led to a safer and more cost effective roofing solution – a ‘Cablenet’ roof design, assembled at ground level, fixed to node points and hydraulically jacked into its final position. The Cablenet roof design solution reduced the need for construction workers to work at height, since the majority of the assembly work was carried out at ground level.

## IMPLEMENTATION ON SITE

To achieve world class performance on health and safety, successful implementation at project level was critical. Each project’s leadership, planning and workplace organisation, systems and procedures, and probably most importantly, behaviour and

culture programmes needed to be robust and fully effective from very early on.

On the Aquatics Centre project, for example, a significant amount of planning and organising took place in a relatively short space of time. What initially looked like a simple large work site soon

and safety management across all the projects. These standards, defining high level expectations in a wide range of technical areas, were collaboratively developed with Tier 1 representatives in order to set minimum expectations.

Implementing standards was enhanced by a set of supporting

## ... consistency in health and safety management ...

became a challenging work area with a number of concurrent activities taking place. All activities on the project were subject to thorough planning and review processes. The principal activities involved movement of heavy plant, significant lifting operations and placing large volumes of reinforcement and concrete in the early stages of construction. One of the key mechanisms for recording and communicating the changing workplace was a ‘Weekly Overview’ process that identified key areas of interface between people and machinery, and the associated risks.

A number of Olympic Park Common Standards were developed in order to drive a degree of consistency in health

documents that illustrated workplace conditions and personal behaviours in order to clearly communicate ‘what good looks like’. These Visual Standards were used by the Aquatics Team in a number of ways: communicating health and safety expectations to teams; checking conditions on site inspections; and as leadership tool in management by eyesight tours. The nature of the documents also meant that workers for whom English was a second language, were still able to understand site requirements and participate in safety related activities. *An example of a visual standard is shown opposite.*

## LEADERSHIP WITHIN A PROJECT

The team constructing the Olympic Stadium adopted and developed what became the Olympic Park approach to creating real, visible leadership around health and safety through a variety of means. A Project Leadership Team (PLT) was formed involving senior staff from the Tier 1 and a representative from each of the Tier 2s/3s (package sub-contractors). The PLT took the lead in promoting high standards of health and safety, and encouraging everyone to get involved and stay engaged. They actively encouraged near miss reporting – and by the end of the construction programme we had suffered 125 reportable accidents across the works, but received over 10,000 near miss reports which represent worker and supervisor identified opportunities for improvement, a sort of construction site suggestions box.

## OCCUPATIONAL HEALTH

The health and well being of the site workforce was also central to the overall health and safety programme. There is good evidence that far more workers are harmed by exposure to hazards to their health – dusts, fumes, vibration, noise and many other factors – than are injured in accidents. The services of professional teams based on the Olympic Park and within the Athletes’ Village ensured attention to these risks. The health initiatives covered:

- Pre-employment health checks, including medicals for safety critical workers
- Advice to identify safer substitute materials and methods
- Assistance with controls on exposures to chemical, physical and ergonomic hazards
- Health surveillance

- Drop-in Treatment Centres
- Campaigns on well-being (heart, obesity, diet, diabetes, sexual health, etc etc)
- Emergency Call-out with ambulance services operated by paramedics

The services were well respected, demonstrated by regular site worker surveys and the willingness of London Ambulance Service to sign a Memorandum with a private health provider as “First Responder” in the event of a health emergency.

## REWARD AND RECOGNITION

One of the overriding impressions that health and safety programmes can convey is that of a focus on what is wrong, what can cause harm. Many workers will “see” health and safety when inspections are conducted, and all that is commented upon, noted and followed up are non-compliances with site rules. This wholly negative approach is not consistent with efforts to engage, involve and enthuse people to create exemplar projects and exemplar sites. Instead from the early stages of the works the ODA celebrated

## LESSONS LEARNED - CONCLUSION

Through careful planning, the implementation of strategies which have a proven track record and, above all, clear leadership even the most complex construction programme can be safely managed. It is important that this is done systematically, which is why the ODA is the first Delivery Authority for a Games to have its health and safety management system certified against the internationally recognised Standard OHSAS 18001. The record is of a programme that has operated for over six years on site, with more than 80 million hours worked. During this time the accident experience has been comparable to the average for all GB employment rather than just for construction, and the health programme provides a degree of care and campaigning not previously experienced in the industry. The stretching benchmark of an accident rate better than 1 in a million has been reached and held for over a year and the health and safety performance has contributed to the projects hitting and beating their targets for delivery timetable and cost control.

## ... beating their targets for delivery timetable and cost control ...

health and safety performance, marking every achievement, creating an impression of winning, of protecting people by doing a great job. This was done locally at project level, and across the programme with everything from London 2012 badges and breakfast vouchers to competitions, award schemes and celebrations every time a million hours was worked without an accident or some other laudable achievement was made.

Healthy and safe projects are also efficient, and the time spent on health and safety represents a sound investment rather than an on-cost.

### Footnote

1 There are many materials, including independent evaluation research reports on the London 2012 Learning Legacy website: <http://learninglegacy.london2012.com/themes/health-and-safety/index.php>

Olympic Park standard on: **Safe use of pulpit / platform steps**



### Key points:

- A risk assessment and method statement should identify when pulpit steps should be used
- Only those who have received appropriate training should undertake any work at height
- Access equipment for any work at height must be erected on a firm, level base
- Individually numbered, inspected and maintained
- Outriggers must be used to increase stability

