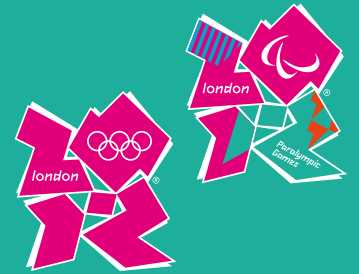


# Learning legacy



Lessons learned from the London 2012 Games construction project

## Innovation in timber supply for London 2012

### Abstract

When London bid to host the London 2012 Olympic and Paralympic Games it pledged to set new standards for sustainable development. One of the Olympic Delivery Authority's (ODA's) objectives was that all timber used would come from known legal and sustainable sources.

This followed the UK Government's best practice timber procurement policy for the public sector, as defined by the Central Point of Expertise on Timber Procurement (CPET). This had never before been done on a major construction project, and so was a pioneering initiative on a massive scale.

Following consultation with industry, the ODA put in place innovative methods and processes to ensure delivery of its objective.

These included: embedding the core objective in policy, procurement, designs and procedures; establishing a Timber Supplier Panel; creating controls, notably a Delivery Management System; educating key stakeholders and the supply chain; and becoming a champion for sustainable timber and a watchdog of the system.

It worked with the two main timber certification bodies to develop a single agreed framework for certifying legal and sustainable timber.

Innovation on this project has been a catalyst for change in timber supply, and produced significant lessons and benefits for industry.

### Author

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The Velodrome's distinctive cedar cladding

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The ODA's ambition was that all timber would come from known legal and sustainable sources.

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### Introduction

When London bid to host the Games it pledged to deliver the 'greenest Games ever', setting new standards for sustainable development. Following the award of the Games in 2005, the ODA aimed to establish sustainability benchmarks for the development of Games' facilities, and to take a lead in best practice that others across all sectors of UK construction could follow.

One of the ODA's ambitions was that all timber used would come from known legal and sustainable sources. This followed the UK Government's best practice timber procurement policy for the public sector, as defined by the CPET.

This had never before been done on a major construction project, and so was a pioneering initiative. The scale of the ambition was also immense.

The Games' east London site comprises seven major venues across a 246 hectare Olympic Park plus the Athletes' Village, all featuring thousands of construction products brought to site via hundreds of deliveries a day. The Park alone featured more than 20 Tier One or main contractors and 20 main projects including venues, structures, landscaping, utilities and bridges.

This paper sets out the challenges involved in realising this ambition, and the processes and procedures ODA set in place in order to deliver it. It highlights key feedback and learning from the project. The content is based on interviews with key personnel and research using relevant project documentation. This research paper is a summary of a longer report, written by Dr Ed Suttie of BRE and scheduled for publication by IHS BRE Press.

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A key challenge was that timber would be used extensively and in many forms, which made it difficult to implement controls on supply.

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### Key challenges

The ODA's ambition posed a number of challenges:

- There are a number of different schemes certifying timber's Chain of Custody (that it comes from legal and sustainable sources). The two main schemes are those operated by the Forest Stewardship Council (FSC) and Programme for the Endorsement of Forestry Certification (PEFC). Although both schemes work towards the same objective, they operate independently and have different frameworks.
- Timber would be used extensively across the site, in many different forms, from the Siberian pine used to make the Velodrome track to red louro faced roof cladding panels for the Aquatics Centre, by multiple agencies and organisations. This made it difficult to implement controls on supply.
- Any intervention to control and manage the supply chain had to comply with the Official Journal of the European Union (OJEU) procurement rules.
- Any failure to procure timber from sustainable sources had the potential to pose a significant risk to the reputation of this extremely high-profile project.

In addition, the developer of the Athletes' Village, Lend Lease (LL), had its own approach on timber sourcing. The Athletes' Village began as a private project and LL's procurement policy of using FSC certified timber was already embedded in it. LL successfully made the case to ODA that it should continue to pursue Project FSC certification (2009: TT-COC-002826).

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Simple, robust methods and processes were required to enable the supply chain to meet the ODA's timber ambitions.

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### How the ODA delivered

The ODA engaged extensively with the timber industry to ensure its ambition for legal and sustainably sourced timber would be deliverable. It recognised that it would need simple, robust methods and processes to meet these challenges and enable the complex supply chain to function successfully to meet its specification.

This demanded innovation in:

- getting the FSC and PEFC schemes to work together;
- raising the importance of unbroken Chain of Custody for the supply chain;
- taking risk out of the process of ensuring legality and sustainability of timber.

Working within OJEU rules, ODA set in place a series of methods of processes. These were:

- **Embedding the core objective in all policy, procurement, designs and procedures.** This was a critical success factor in ensuring the objectives would be met. To support implementation, a number of tools and processes were put in place to gather data and monitor the performance of contractors against the objective.
- **Working with two different Chain of Custody certification schemes, FSC and PEFC, to come up with an agreed single framework.** FSC and PEFC worked with the client to provide a platform to minimise confusion regarding timber certification schemes and to simplify the procurement of sustainable timber for future projects.
- **Establishing a robust and reliable means of supplying legal and sustainable timber, primarily through the Timber Supplier Panel.** The Timber Supplier Panel was one of the ODA's site-wide supply frameworks and comprised 16 companies. They were chosen through a bidding process that questioned candidates' environmental and sustainability policies, and ability to deliver on the ODA's ambitions on health and safety and commercial issues. This relieved contractors of some of the risk of procuring legal and sustainable timber, shifting the balance of responsibility to the suppliers. The panel was

sufficiently broad to provide effective price competition.

- **Establishing a Delivery Management System to monitor and control all materials coming onto site.** The Delivery Management System helped to ensure that only members of the Timber Supplier Panel provided timber to the Park. This also enabled full checking of Chain of Custody, with daily checks being carried out. The Delivery Management System flagged up when deliveries were due and highlighted, in real time alerts, any issues with the certification scheme for timber or any non-compliance issues.
- **Becoming a champion for sustainable timber and an effective watchdog of the system with real policing, and quick and effective action to quash non-conformities.** In one instance, product was ordered from a supply panel member's local outlet rather than directly via the panel contact. The product was found to have come from an FSC certified source but had been bought and sold by a non-certified organisation and at that point Chain of Custody had been broken. The product was, therefore, removed from site and replaced with a product with full chain of custody. Corrective actions were implemented by the panel member to monitor orders and provide refresher training to the teams at branch level.
- **Gathering data, particularly via monthly delivery reports.** Companies on the Timber Supplier Panel that did supply timber completed monthly delivery reports, detailing what was delivered, where, when and by whom. The report linked the Delivery Management System number to delivery ticket number, volume of timber, certification scheme mark and Chain of Custody reference. The Delivery Management System was supported by an ISO14001 certified system to ensure accuracy and transparency of performance reporting. The monthly delivery reports allowed the ODA to track and trace, accurately, the volumes of timber to enable fully transparent reporting. Each contractor also had to report against environmental Key Performance Indicators, which included timber.

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The Timber Supplier Panel was an ODA site-wide supply framework used by contractors.

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- **Identifying a single point of contact within ODA for suppliers to seek guidance on timber.**
- **Engaging to ensure every contractor understood the process and cascading that understanding down through their delivery teams and partners.** An initial inception meeting between contractors and suppliers was followed by a succession of events (focus groups, briefings and training) and two detailed guidance documents were issued. Meetings and workshops were held to educate the supply chain and wider stakeholders.
- **Establishing a mechanism of justification reporting to allow potential 'special cases' for non-compliance to be considered.** These reports were presented to and considered by experts.
- **Promoting the reuse of timber from temporary uses on site.** Timber shuttering used in the construction of the Aquatics Centre's concrete walls was passed to community projects for reuse.

### Project team feedback (from interviews)

In the early stages of the project there was a gap between what the client was asking for and what the industry perceived as the need. This suggested that the timber industry was not used to bidding for large-scale projects with a diverse range of factors to consider as part of a balanced procurement process. The timber industry has improved directly as a result of this project and will continue to do so by gaining ongoing experience in future bids on large-scale projects.

Initially it was difficult to persuade some of the Tier One contractors that the Timber Supplier Panel was necessary as they considered it over-prescriptive and believed they could deliver satisfactorily through existing channels.

Ultimately the Tier One contractors recognised the benefits of the process, noting that it:

- made it easier for the contractors to comply with the ODA commitment;
- took a share of the risk away from the contractor and placed it with the suppliers;
- enabled the contractors to provide full audit information for the ODA;
- created new business relationships.

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Ultimately the Tier One contractors recognised the benefits of the Timber Supplier Panel.

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Timber is used in many different forms, including site hoarding

The Delivery Management System proved effective at flagging non-compliant timber when it was delivered as sawn timber or timber goods. But it was less effective when the timber was embedded in a prefabricated unit and the item was not identified in the system as timber.

Maintaining the Chain of Custody was a significant issue and sometimes proved very challenging in a supply chain that had numerous handlers. The contractors relied on the Chain of Custody being managed by procurement through the Timber Supplier Panel.

Overall, the system worked well. One contractor said: 'We used reclaimed timber in some applications and each delivery of this was picked up by the Delivery Management System as non-certified timber. It is ok to use reclaimed timber in the Park, providing it is validated and checked – it is reassuring to know that the Delivery Management System is working for us.'

Some of the suppliers did not understand Chain of Custody well and as a result there was a risk that it could be broken as timber went through the fabrication process. A key learning point is that Chain of Custody should have been brought to the fore earlier and linked to Timber Supplier Panel awareness training and promotion. This issue was subsequently addressed and awareness raised considerably.

Tier One contractors carried out their own checks on the supply chain to ensure deliveries were signed off and appropriate but they relied heavily on the policing of the Delivery Management System. One contractor also said the high level of security on the site was helpful, and security staff had raised queries in some cases.

Contractors have learned much about certified legal and sustainable timber. Company policies that did not specify certified timber now do. Contractors now have a project-specific policy to inform and educate their sub-contractors.

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The main legacy value for us is the significance of FSC and PEFC working together.

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#### The legacy – lasting value and lessons

FSC and PEFC timber certification schemes worked together, setting a precedent for a unified approach. This cooperation was a step change for the industry. One Timber Supplier Panel member said: 'The main legacy value for us is the significance of FSC and PEFC working together.'

The Timber Supplier Panel took risk away from the contractors concerning the use of illegal or non-sustainable timber, which could have resulted in loss of contract, being taken off the project and severe damage of reputation. A tightly policed and monitored system was created, refined and operated, which should be considered a blueprint for future projects. The Timber Supplier Panel and the ODA's overarching ambition have gone a long way to helping to eliminate illegal and non-sustainable timber from the project. The ground-breaking nature of the Timber Supplier Panel was confirmed by a special recognition award, 'Achievement in Sustainability', at the Timber Trades Journal Timber Awards in 2009.

The Delivery Management System to police timber supply to the Park proved successful and all timber on site was legally and sustainably sourced. A significant legacy for Tier One contractors is their full understanding of the supply chain and delivery routes for the project and of how to ensure design changes are logged and monitored as the supply chain changes. The Timber Supplier Panel helped to mitigate risks, notably in two scenarios: firstly where the contractor did not understand the client's requirements and, secondly, where suppliers lacked knowledge about certified timber and were unwilling to engage.



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## The Timber Supplier Panel has had a galvanising effect on the timber industry.

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### Recommendations for future projects

The client and their contractors should set a clear and focused strategy for sustainable and legal timber

Government and public bodies are being encouraged to adopt sustainable timber policies in line with CPET. The Timber Regulation coming into place in Europe in 2012 will make the trade in illegal timber an illegal act in itself.

### Deliver comprehensive continuous training

Embed knowledge into the main contractors' and sub-contractors' businesses. The contractors faced tough questions on this project, and that in turn led them to ask tough questions about their own company practices. The project has caused businesses to review, renew and rewrite their sustainable timber procurement policies.

### Manage the supply chain by creating methods and processes for controlling the supply of wood products

Methods and processes should take account of key learning from the Games, notably in ensuring Chain of Custody is maintained and that there are clear, effective procedures for non-conformities.

### Monitor the supply chain to provide assurance that the objective is being met

Smaller projects should set clear requirements and install a robust means of checking compliance. Engage a certification body to offer the assurance of a third party audit of methods and process.

### Conclusions

The Timber Supplier Panel was a hugely innovative step and was said by one panel member to have had a galvanising effect on the timber industry.

The project has raised the importance of unbroken Chain of Custody for the supply chain, especially for prefabricated construction products, with the supplier either achieving certified status or 'retaining title' for the timber. The project has raised the issue of whether Chain of Custody works for a construction industry relying increasingly on prefabricated units and products that may contain timber but are not classed as timber products. The challenge is to ensure that each stage of fabrication is certified. Other ways of meeting the requirements for Chain of Custody need to be considered.

The project has increased knowledge and understanding of certified timber across the supply chain. This knowledge has been cascaded through the tiers of contractors and sub-contractors. The suppliers fully understand the certification schemes, the opportunities available and equally, the consequence of non-compliance. A number of suppliers have said that their engagement with the ODA was the first time they had come together to openly discuss the issues of legal and sustainable timber and the supply chain. This open forum needs to continue beyond the Games and should be adopted by a timber industry organisation.



The Velodrome track is made from Siberian pine

There is a significant opportunity to apply the knowledge and learning gained beyond this project. The sustainable timber supply process should be adopted for other major projects in the public and private sector. The timber supply chain remains highly focused on price, but there are opportunities.

The Glasgow 2014 Commonwealth Games, Rio 2016 Games and other notable projects have considered the implementation of the Timber Supplier Panel principles. A significant legacy for panel members is the knowledge and experience of completing Invitations to Tender and Pre-Qualification Questionnaires for future large projects. Some have already registered to supply the Glasgow 2014 Commonwealth Games.

The timber industry supply chain has been revitalised through training and experience on this project. The Timber Supplier Panel has brought the industry together to meet the requirements of an exacting and knowledgeable customer. It has raised the profile of certified sustainable timber, and brought PEFC and FSC together. This has provided a significant test and learning for the sector and has given confidence to meet changing client needs into the future. The reality of only legal and sustainable timber is 'gaining traction' as the project delivers.

Companies manufacturing products containing timber, such as bathroom pods, now have certification and are active in the certified timber marketplace. Suppliers can now bid and win more effectively on other large projects – a reward for being pioneers. The requirement for certified timber on the Park and the Athletes' Village has seen a number of suppliers of timber products gain FSC and PEFC Chain of Custody during the project lifetime, growing the wider supplier base for verified timber products.

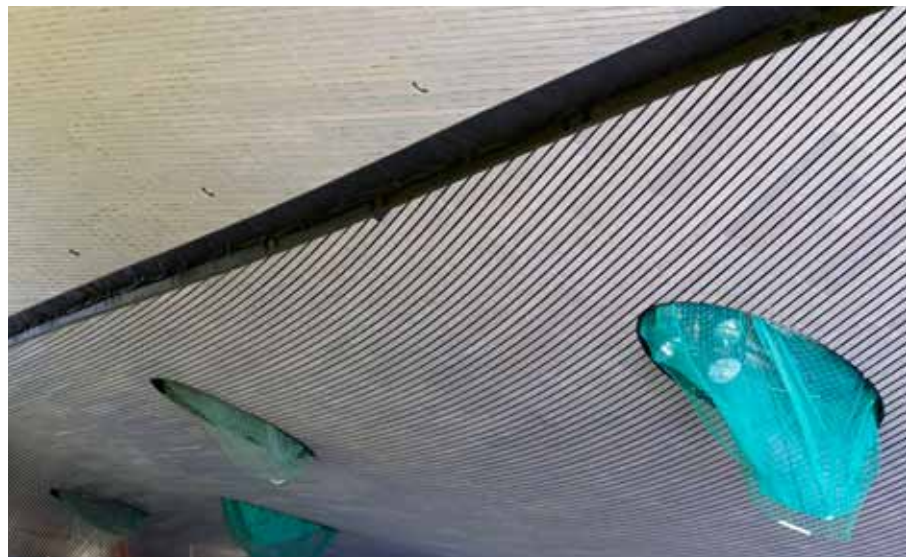
The project has been an important catalyst for change. Timber Supplier Panel members and contractors have grown and developed their networks. The project has increased the uptake and use of sustainably sourced timber. It has prompted those involved to 'up their game'. The construction industry and its clients can clearly see that sustainable timber can be delivered with confidence and this will raise the profile of the timber industry.

A review conducted by the Timber Trade Federation indicated that the volume of certified timber products on the market in the UK rose from 65 per cent in 2005 to 85 per cent in 2009 and continues to rise. The influence of the Games is part of this success story.

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The Aquatics Centre's interior features red louro panels

### Related research

This research paper is a summary of a longer paper produced by the author. Refer to the BRE website ([www.BRE.co.uk](http://www.BRE.co.uk)) for further details.

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