

# London 2012 Olympics “The Green Build”



Rachel Krzeminski

Aggregate Industries UK Ltd

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## Aggregate Industries UK Ltd

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- Aggregate Industries is an international aggregates, construction and building materials group
- We are a major producer and supplier of primary, secondary and recycled construction aggregates, asphalt, ready-mixed concrete and precast concrete products
- We have over 70 years of experience in highways maintenance, road surfacing construction and associated civil engineering services
- We have leading regional market positions in the UK, as well as operations in the Channel Islands and northern Europe
- We employ over 5000 people



## A member of the Holcim Group since 2005

- Founded in 1912 and based in Switzerland
- A leading global supplier of cement, aggregates, ready-mix concrete, asphalt and related services
- The company has been listed on the SWX Swiss Exchange since 1958 valued at over 18.3bn CHF
- Employs 83,000 people worldwide
- Acknowledged leader in sector for sustainability



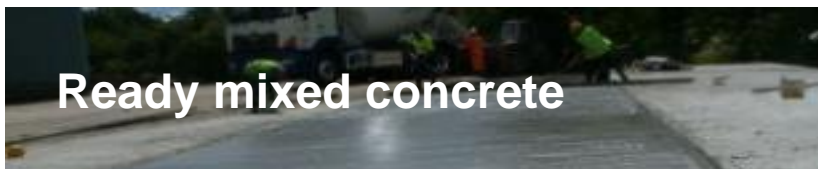
## Aggregate Industries in figures - 2011



**34m tonnes**



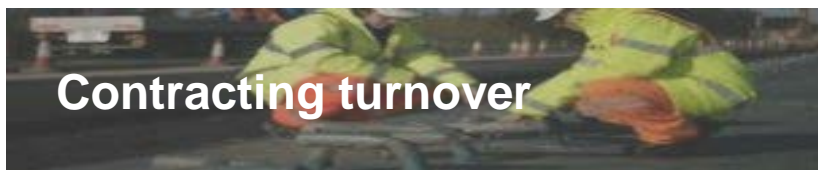
**5.4m tonnes**



**2m m<sup>3</sup>**



**2.5m tonnes**



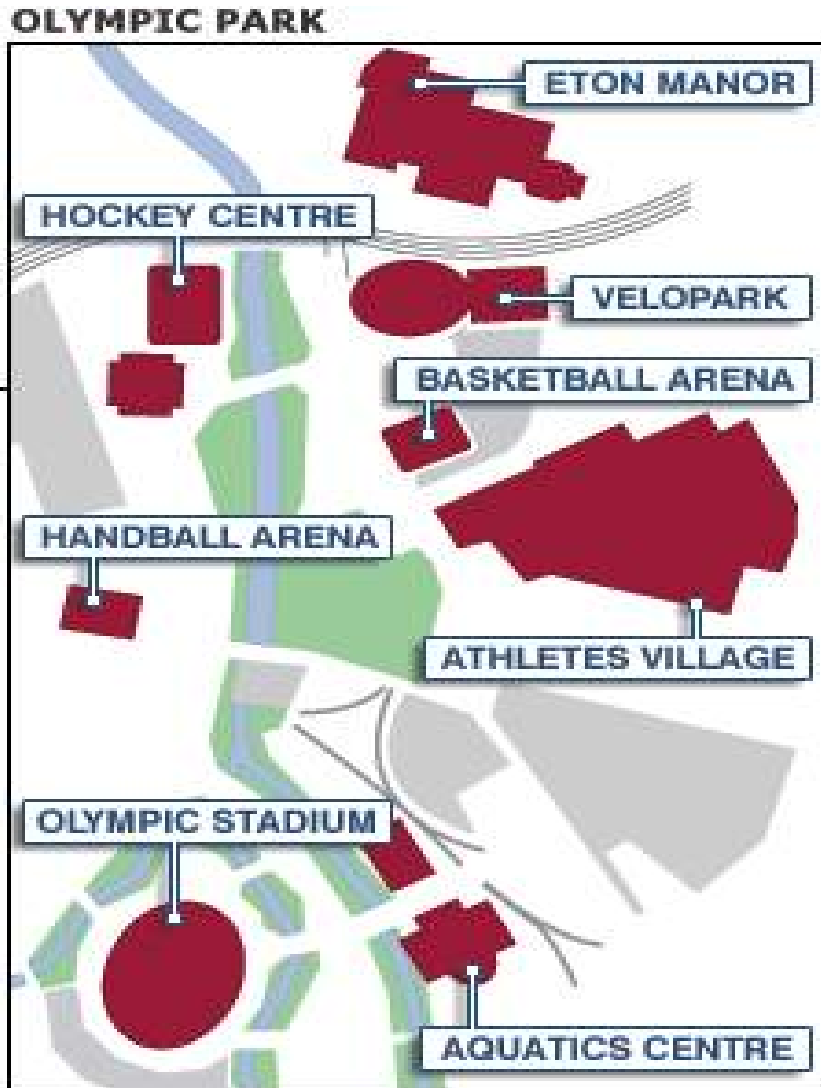
**£304m**

# The Construction of the London 2012 Olympics

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- Overview of the Olympic Construction
- Venue design and construction
- The tender process
- Contract award and KPI's
- Sustainability in contract implementation
- The Lasting Legacy

# The Olympic Construction



- £9.3bn largely public-funded construction programme
  - Olympic Park
  - Athletes Village
- 500 acre site in Stratford, East London
- Construction started in 2006 and the site was handed over in late 2011 for the Games time overlay and Olympic test events
- It is only 5 miles from Central London



# The Olympic Park - Before





## The Olympic Park - After





# The Olympic Park – June 2012





## The Olympic Stadium



The Stadium hosted the athletics as well as the Opening and Closing Ceremonies

Capacity of 80,000 which can be reduced after the Games if required

## The Aquatics Centre – Games Time



The Aquatics Centre was designed by Dame Zaha Hadid and will have a capacity of 17,500 during Games time.

The iconic roof is more than 80m wide and 160m long



## The Aquatics Centre - Legacy



In Legacy, the capacity of the Aquatics Centre will be reduced to 2,500

## The Velodrome – February 2012



The Velodrome hosted the track cycling events and has a permanent capacity of 6,000.

The adjacent BMX venue has an additional 6,000 capacity



## The Velodrome – Games time



The roof is designed to reflect the geometry of the cycling track, and was proven that it is the fastest Velodrome in the world.



## The IBC / MPC - January 2012



The IBC/MPC has a floor area of more than 90,000m<sup>2</sup> and hosted more than 20,000 broadcasters during the Games

The building is 275m long and would house five jumbo jets wing-to-wing!

## Basketball Arena – June 2012



The Basketball Arena is a temporary venue with a capacity of 20,000  
After the Games, it will be dismantled and removed from the Park



## Landscape and Public Realm - July 2011

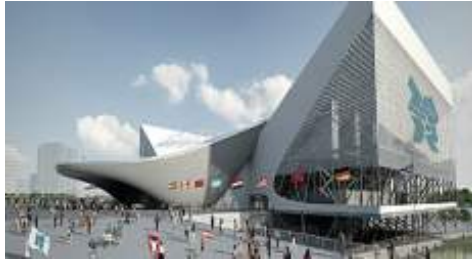


A 2.5sq km area of land has been transformed, with over 2 million tonnes of soil washed and replaced on the site.

2,000 trees and 500,000 plants have been introduced onto the Park



# Olympic Construction



**75p in every £1 the ODA is spending is going towards the long term regeneration of the area**

## The Stakeholders in the Games

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- LOCOG – The London Organising Committee
  - Responsible for staging the Games in 2012, and the test events in 2011
- ODA – Olympic Delivery Authority
  - Public body responsible for developing and building the new venues and infrastructure
- CLM – The Delivery Partner
  - Consortium appointed to manage the programme and costs for the venues and infrastructure. Latterly responsible for working with LOCOG
- OPLC – The Olympic Park Legacy Company
  - Planning the Legacy after 2012, ensuring the Games deliver positive changes for the area
- There were also external political influences on the project



## The Olympic Tender Process

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- Aggregates and Ready Mixed Concrete were both identified as areas of 'major spend' by the ODA
- Framework agreements to deliver to 7 main venue contractors. Securing these contracts essentially gave the "licence to supply"
- As the venues were still in the design stage, only indicative volumes were given
- Procurement was on a "two envelope" system
  - Quality – 60%
  - Price - 40%
- KPI's were included in the Contractual Targets

## KPI's in the Tender Process

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- The ODA set out their minimum requirements for sustainable products and sustainable transport in the tender
  - ▶ 50% of materials (by weight) to be transported to site by rail or water
  - ▶ 25% of materials (by weight) to be recycled
  - ▶ 20% of materials (by value) to be recycled
- These formed part of the ODA's Sustainable Development Strategy
- There are also key targets for the ODA in terms of carbon, water, waste and biodiversity



## The Ready-Mixed Concrete Tender



- The Ready-Mixed Concrete tender was awarded in December 2007
- Primary aggregate / cement replacement
  - ▶ China Clay Waste – Cornish Granite
  - ▶ Glass Sand, Ground Granulated Blast Furnace Slag (GGBS), Pulverised Fuel Ash (PFA)
- Over 400,000m<sup>3</sup> supplied to the Olympic Park contractors

## The Aggregates Tender

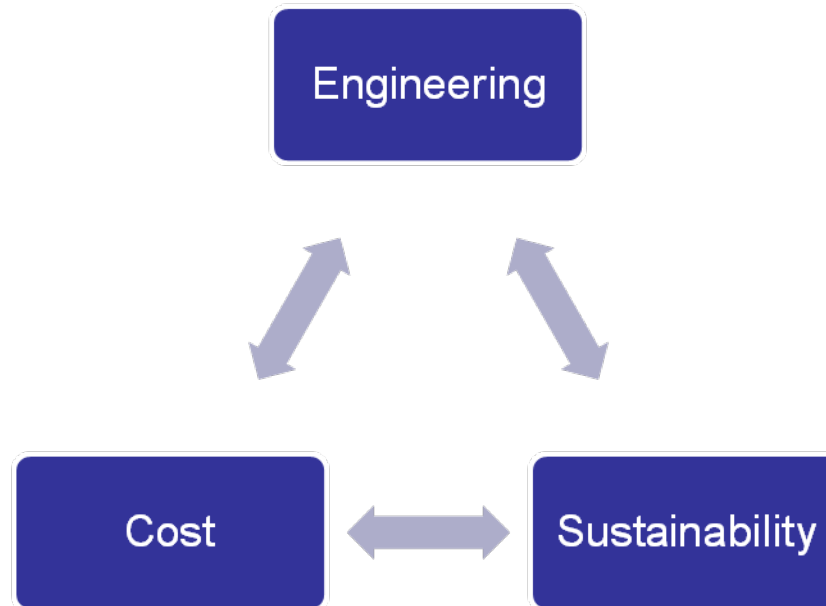


- The Aggregates tender was awarded in May 2008
- Recycled alternatives proposed
  - ▶ Recycled crushed concrete, spent rail ballast, glass sand and road planings
- Over 1m tonnes supplied for the aggregates contract, plus aggregates supplied into ready mixed concrete
- The aggregate products supplied through the BELC have saved over 125,000 vehicle movements



## The Key Drivers for ODA and CLM

- 'On time, in budget and to a high standard'



- The ODA / CLM objectives can conflict with those of the venue contractors

## ODA Sustainability Report 2011 - Headline Achievements

- Over 90% of the total aggregate volume delivered to the Olympic Park by rail
- 95% of the raw materials for concrete production imported to the site by rail
- Average cement substitutions of 32%, supporting the ODA in saving over 85,000 tonnes of embodied carbon
- Recycled and secondary aggregates supplied as alternatives to primary products
- Concrete with a secondary aggregate content of more than 50% supplied to several venues, including the Olympic Stadium and Aquatics Centre. Many of the 'fair faced' concrete structures incorporate 30% secondary content



## Aggregate Industries and the Olympics

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- Over 1m tonnes of aggregate fill material supplied
- Over 400,000m<sup>3</sup> of ready-mixed concrete supplied, using an additional 450,000 tonnes of in-house aggregate
- 1,500 bespoke precast concrete units supplied to the Velodrome
- £32m of asphalt supply and surfacing carried out, including the laying of asphalt products with a high recycled content
- Over 4,000 tonnes of waste taken away from the Olympic Park by barge
- Over 3m tonnes of materials handled through the BELC
- 14,000m<sup>2</sup> of precast concrete paving laid at the IBC/MPC

## Success of the project

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- Having a broad portfolio of products and the logistical means to deliver them has been a key success factor on this projects
- Through working as an integrated member of the delivery team, we can develop sustainable solutions to achieve complex project objectives
- **The lasting legacy will be what we have learnt**

**Thank you for your time**

Any Questions?

