

Landscape Planning of Green Neighbourhoods

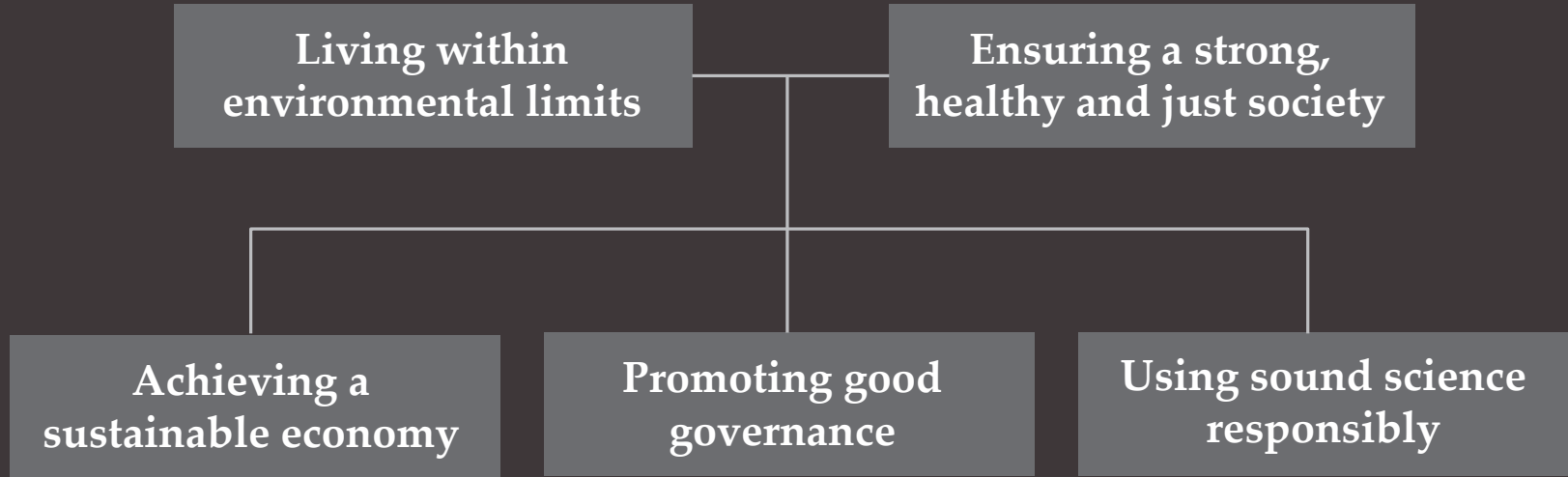
Neil Mattinson - LDA Design

ILGBC, 9th of September 2015

" Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. "

Brundtland Commission, 1987

The Principles of Sustainability



UK Sustainable Development Strategy, 2005

Headline Objectives of Sustainable Development

Using a combination of technology, design, regulation and individual and corporate responsibility to achieve:

- **Conservation and management of natural resources**
- **Sustainable transport**
- **Sustainable consumption & production**
- **Climate change and clean energy**
- **Poverty, health and well-being**
- **Sustainable employment and economy**
- **Governance and social equity**

Delivering Sustainability is Context Driven

1. Understand needs and values of community and place

2. Which objectives/services are already being delivered?

- Are these at risk and how?
- What opportunities are there to improve?

3. Develop a plan for sustainable development

- What is the long-term vision and how will it be managed?
- Practically, what can be implemented now?
- How will this be communicated?

Planning to Deliver

- Planning still has an important role to play
- Taking a creative approach to it will help to deliver high standards
- Focus on overall sustainability and viability, not just low/zero carbon design

This should include:

- 1. Collaboration**
- 2. Understanding local context**
- 3. Clear vision**
- 4. Focus on adding value**
- 5. Efficient layout and design**
- 6. Careful phasing**
- 7. Innovation**
- 8. Alternative sources of finance**

The Queen Elizabeth Olympic Park

*The ecological and sustainable journey from Dereliction
to World Event, Transformation and 21st Century long term Legacy*

Sustainable Design



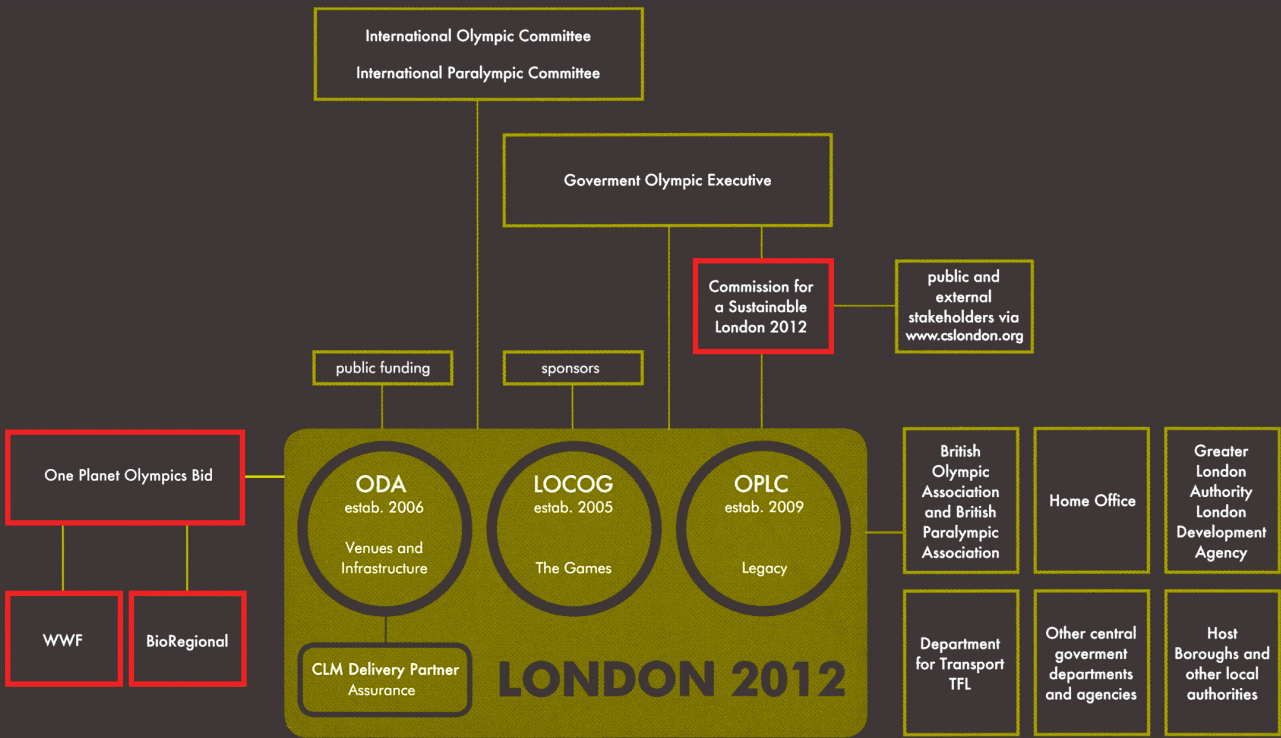
“ We want to ensure London 2012 is remembered not only as a summer of fantastic sporting action, but also as the greenest games in modern times.”

David Higgins, Chief Executive of the ODA

**"We aim to create a pioneering model of urban regeneration:
sustainable infrastructure for sustainable lifestyles."**

*Andrew Altman, Chief Executive,
The Development Corporation, 2012*

Delivering Sustainability

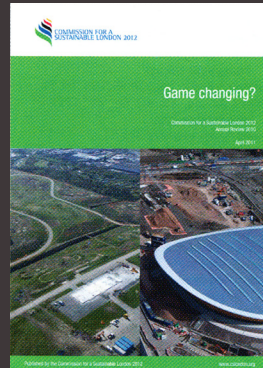
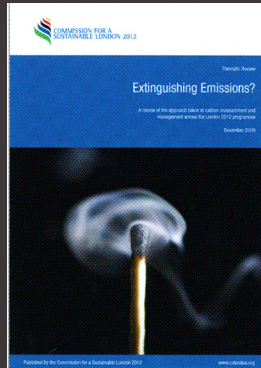
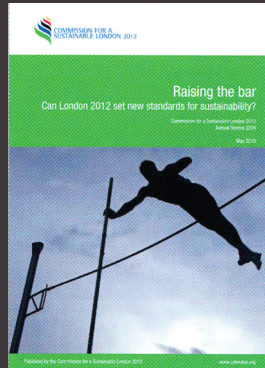
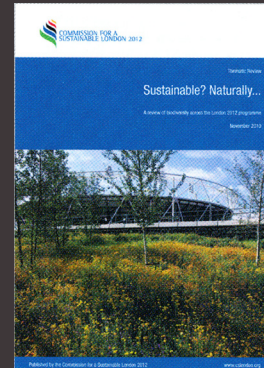
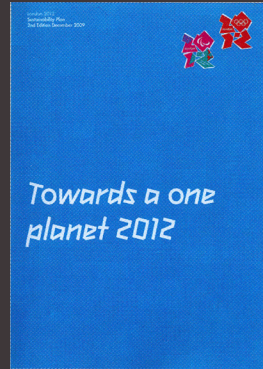
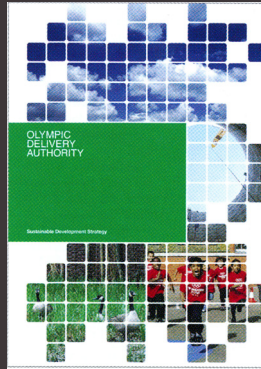
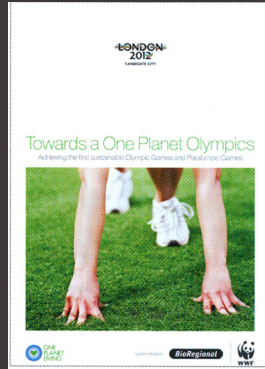


Organigram showing how suslainibily was delivered across the entire London 2012 programme.

LOCOG, the ODA and the OPLC each had separate lines of responsibilily for delivering sustainability.

The entire programme was reviewed by the Commission for a Sustainable london 2012 which made its findings public through a dedicated website.

Key Reports



Recycling and Sustainable Aspirations



Climate change

Aim to minimise carbon emissions associated with the Olympic Park venues through a 50% reduction in CO₂ by 2013.

Waste and materials

Reducing waste through design – 90% of demolition material reused or recycled and at least 20% of materials used in permanent venues to be recycled. The bridge abutments are clad in reinforced gabion baskets filled with site won arisings. Approximately 2,100 tonnes of recycled crushed concrete will be used in abutment facings.

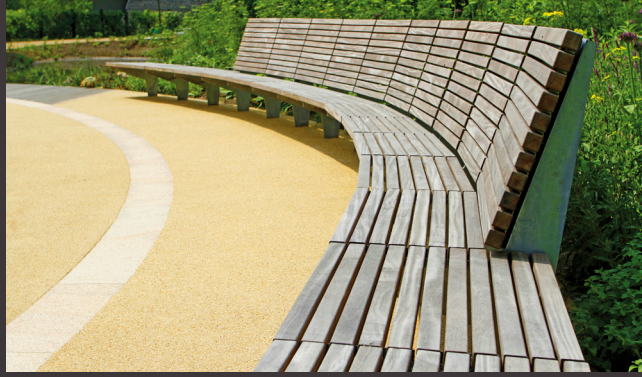
Water

Ensuring efficient water use, reuse and recycling with a target of 40% reduction in the demand for potable water in permanent venues and a 20% reduction target for residential development.

Transport

Prioritising walking, cycling and the use of public transport. Aspiration for 50% of construction materials to be transported by water and rail.

Sustainable Implementation through Design



- Cut and fill balanced
- Bridge abutments filled with recycled crushed concrete
- MTB area created from crushed recycled concrete and reclaimed concrete blocks
- All timber seating from sustainable sources
- Vegetable binder used for surface dressing
- Wind turbine and photovoltaic lighting
- Timber tree containers constructed from Games time temporary bridge decking

The Story Begins.... July 2005



4,000,000,000 global audience
9,200,000 tickets
7,700,000 spectators
800,000 spectators on busiest day
70,000 volunteers
20,000 press & media
14,700 athletes
9,000 workers on site
3,800 + viewing hours
1,000+ cameras
771 Olympic and Paralympic events
205 countries
55 Venues
Olympic and Paralympics Competition
46 sports
41 Training venues : 36 venues

ONE Olympic Park

Olympic Park Context



The London 2012 Games delivered a unique opportunity to revitalise the Lower Lea Valley. It has transformed one of the most underdeveloped areas of London into a benchmark 21st century exemplar of a sustainable environment that supports the diverse and vibrant population of the area.

The project harnessed this potential and created one of the largest new urban parks in Europe for 150 years. In addition to world-class facilities for sports, the setting was created for homes and business to forge a new community within and around the Queen Elizabeth Olympic Park.

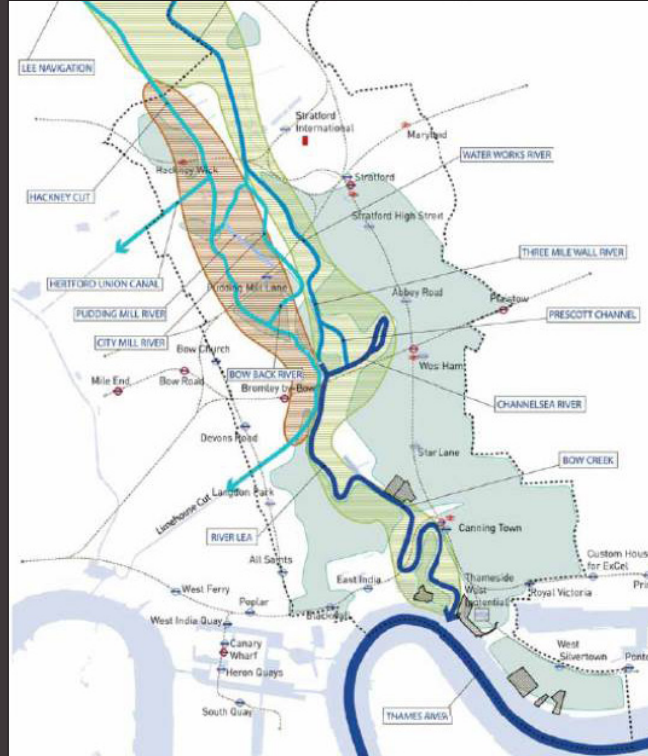
The Urban Wasteland



The Urban Wasteland



The River



The Clean up: Waterways



- 8.5km of waterways revitalised
- 30,000 tonnes of silt and rubbish dredged from the river clean up operations
- River walls repaired
- Cut off walls installed to intercept and safely discharge contaminated ground water
- New reedbeds and wet woodlands created
- General site clean up from a century of heavy industrial use and urban neglect

The Clean up: Soil Cleansing



- 1.5 million cubic metres of soil excavated, cleaned on site and used to form a new landscape
- Cut and fill balanced
- Soil hospital: 2 soil washing machines on site removing contamination including petrol, oil, tar, heavy metals, including arsenic and lead

Soil hospital



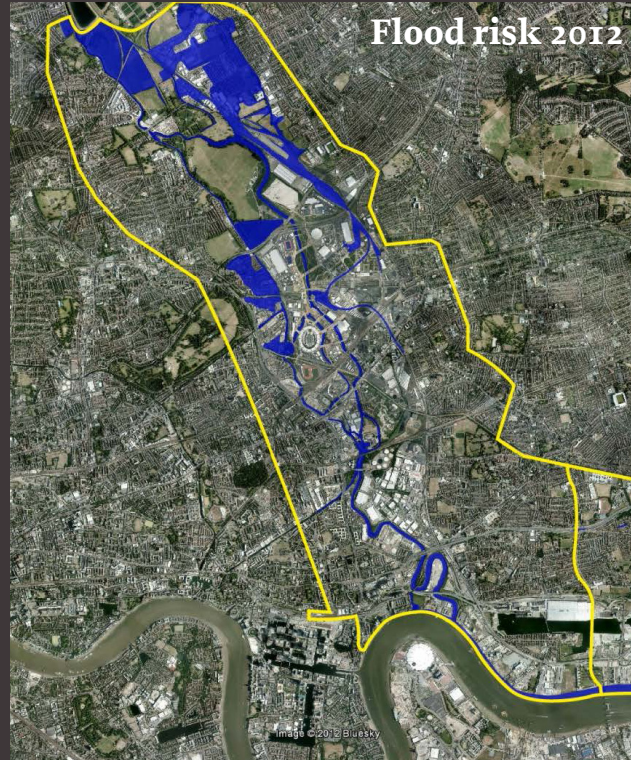
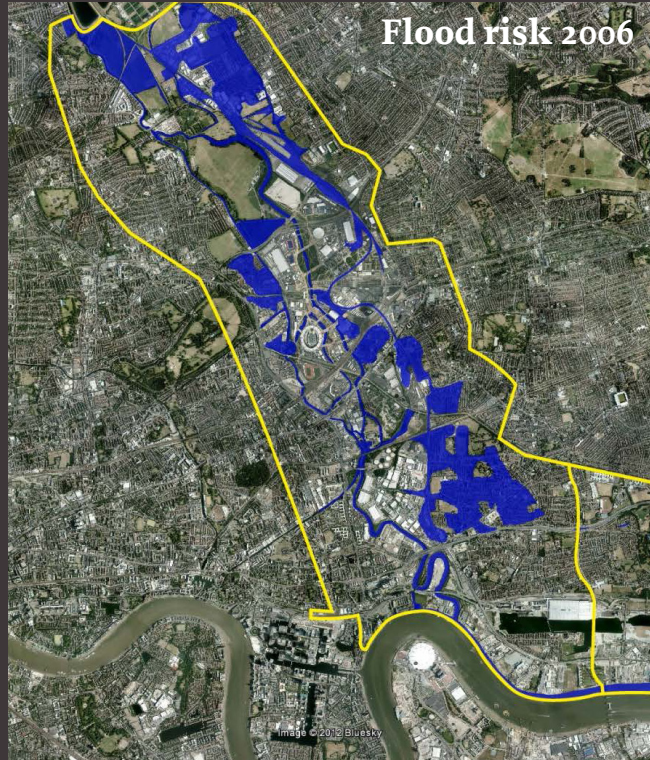
North Park - recycled soil - landforms



North Park - recycled soil - landforms

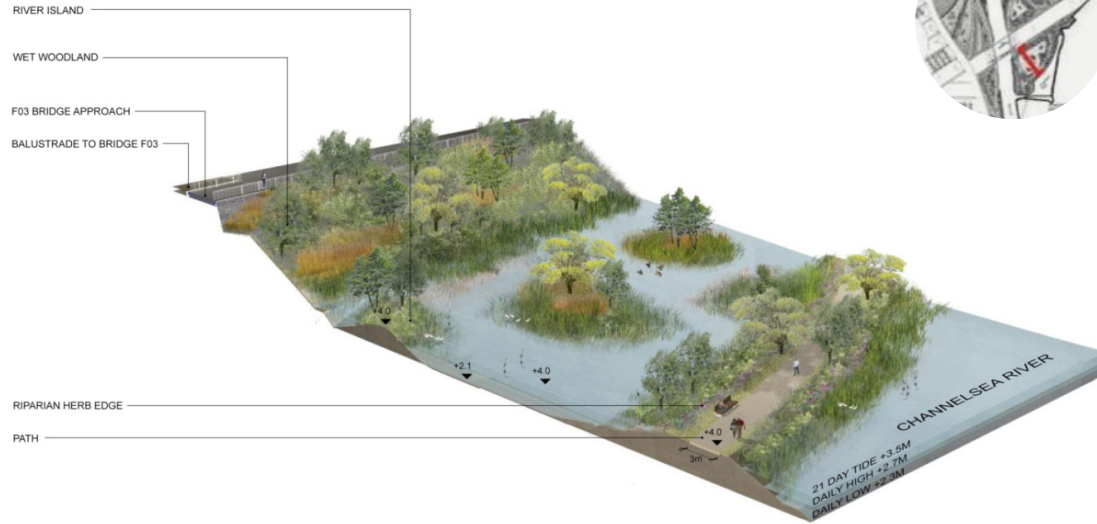


Flooding reduction (1 in 100 year event)



Water storage - wet woodlands

11 ha in size: Largest area of man made wet woodland in the UK



Water storage - wet woodlands



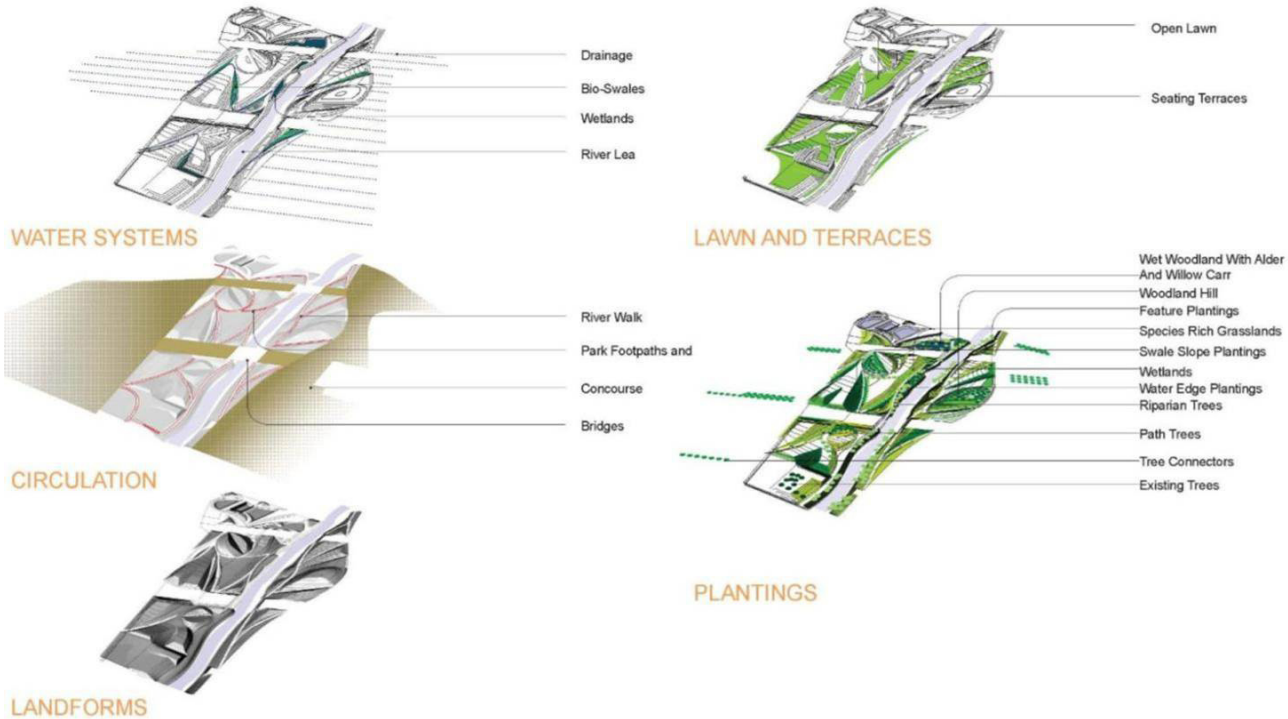
High water



The River



London 2012 Olympic Park - North Park Systems



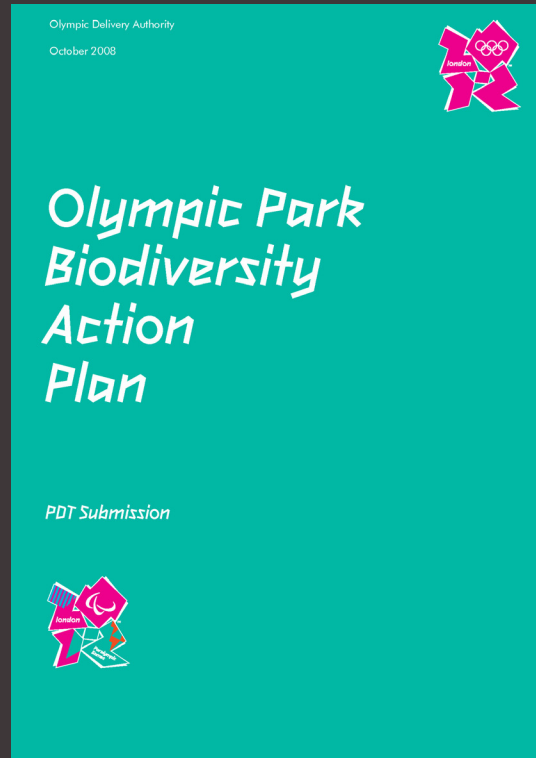
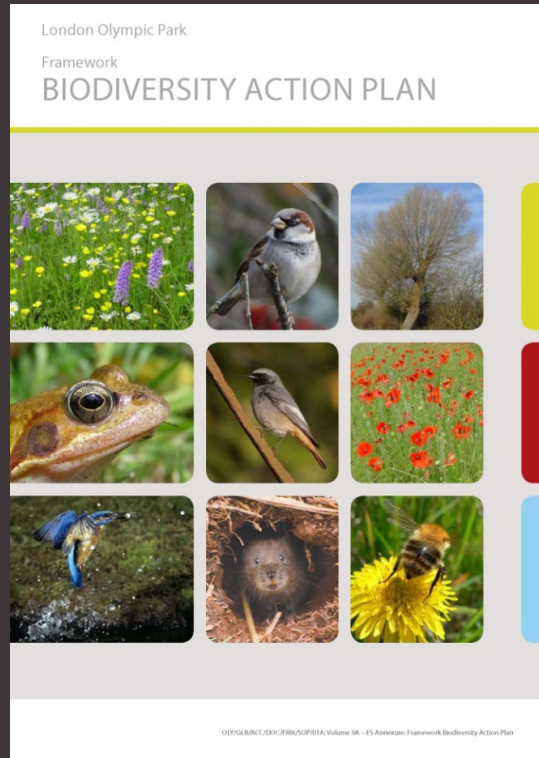
Wetlands in the North Park



Swales



Biodiversity - Action plan



National:

- UK Biodiversity Action Plan 1994 came out of the 1st Earth Summit in 1992 in Rio

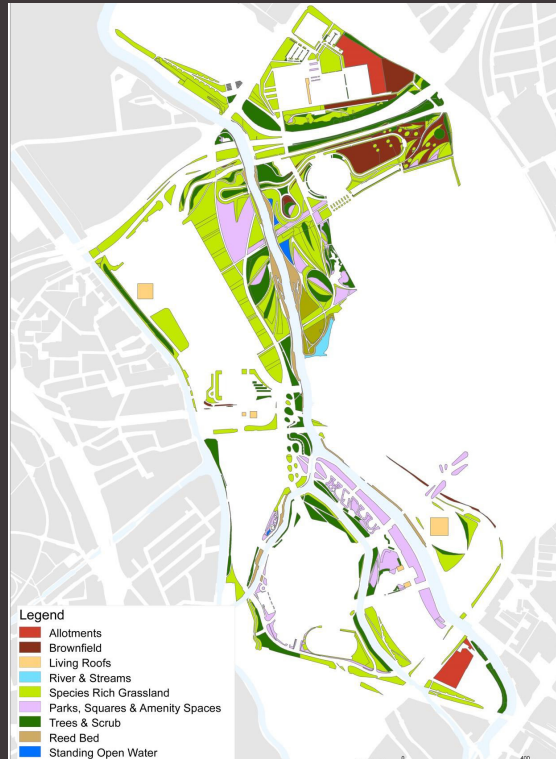
Local:

- London BAP
- Local Borough BAPs
- Olympic Framework BAP

The Olympic Park:

- The Olympic Park Biodiversity Action Plan was published in October 2008 by the Olympic Delivery Authority (ODA). Updated in April 2014.
- It was a requirement of the September 2007 planning permission.
- The BAP was required to cover the construction, Games and Transformation and Legacy phases.

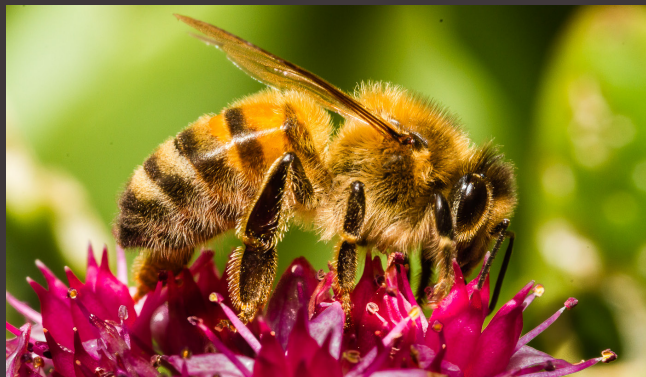
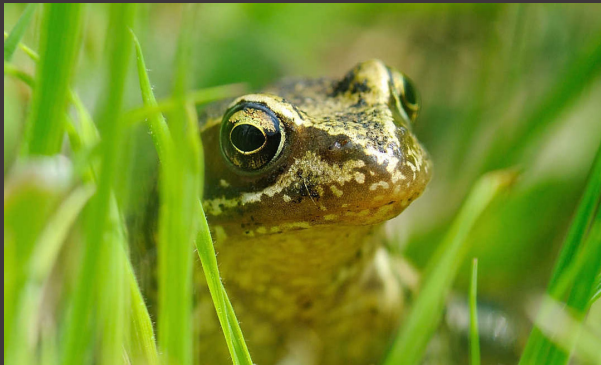
Biodiversity - Targets



Built environment	0.40 ha
Parks,squares, amenity	1.67 ha
Allotments	1.04 ha
Brownfield habitats	5.05 ha
Species rich grassland	23.69 ha
Trees and scrub	10.00 ha
Wet woodland	0.90 ha
Rivers	0.27 ha
Reedbed	1.80 ha
Ponds	0.18 ha
Total	45.00 ha

- 45 Ha permanent biodiverse habitat to be created
- The BAP was a requirement of the Section 106 agreement of the September 2007 planning permission
- The BAP includes targets for the creation of 10 different habitats

Biodiversity - Species



28 Species or species groups are itemised in the Olympic Park BAP, as follows:

- 1 plant: black poplar
- 7 invertebrates: brown banded carder bee, toadflax brocade moth, Cicones undatus, Mordellistena neuwaldeggiana, Olibrus flavicornis, Stictopleurus abutilon, S. punctatonevrosus
- 3 amphibians: common frog, common toad, smooth newt
- 3 reptiles: common lizard, grass snake, slow worm
- 10 birds: black redstart, grey heron, house sparrow, kingfisher, linnet, reed bunting, sand martin, song thrush, starling, swift
- 1 fish: european eel
- Mammals: otter, water vole and all species of bat

Biodiversity - Wildlife installations



Some of the Species Action Plans required specific installations to be established within the park.

These included:

- 2 kingfisher walls
- 2 sand martin nesting banks
- 2 swift hotels
- 1 otter holt
- 4 ponds for amphibians
- 2 log walls
- 8 toadflax habitat patches
- 525 nest boxes for 4 species of bird
- 150 bat boxes
- 4 grass snake egg laying sites

Sustainable Implementation through Design



Sustainable Implementation through Design



Sustainable Implementation through Design



Sustainable Implementation through Design



Sustainable Implementation through Design



London 2012 Olympic Park



Designing for the World Stage

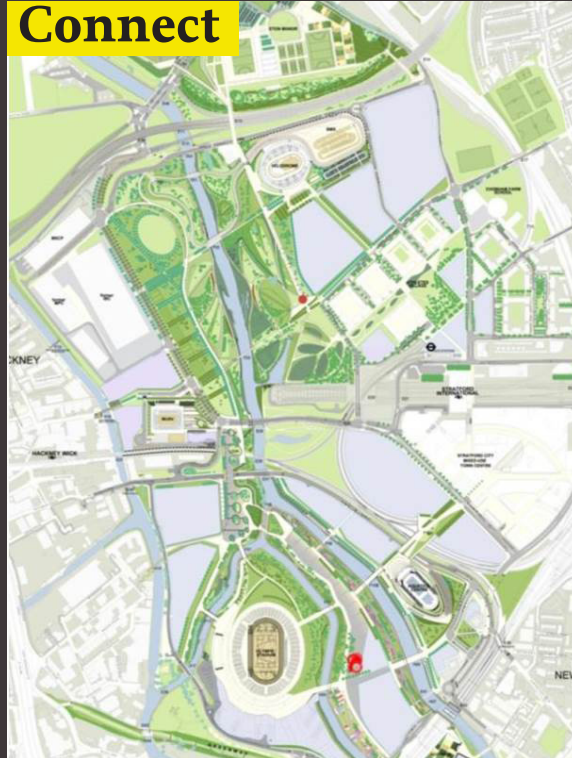


Games / Transformation / Legacy

Remove



Connect



Complete

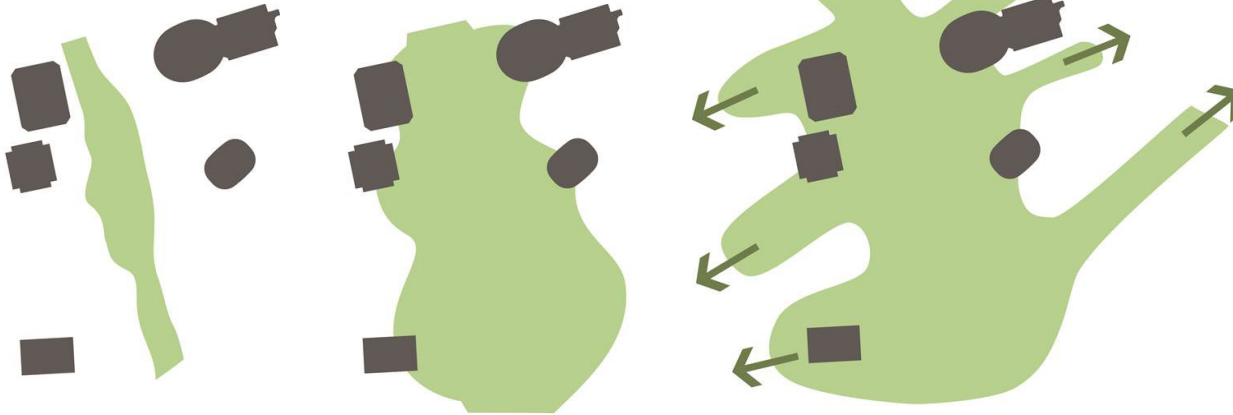


Park to Community Transformation

Pre-Olympic Games

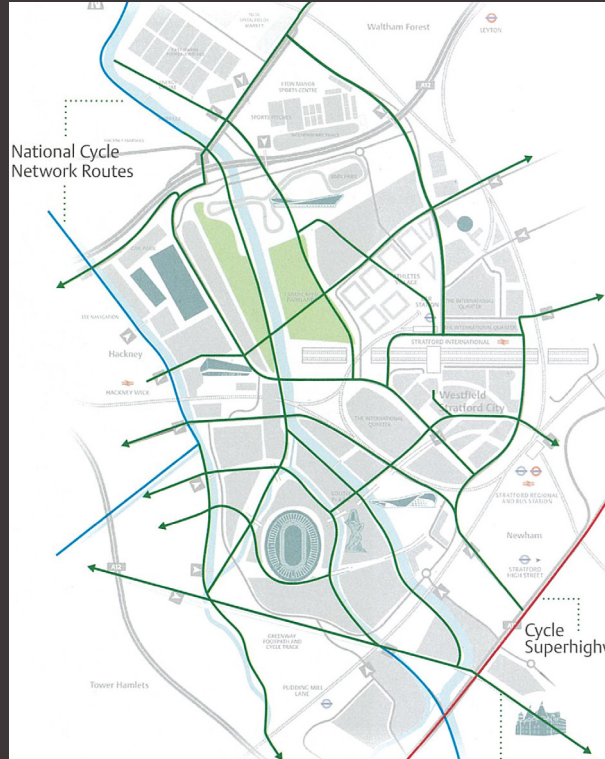
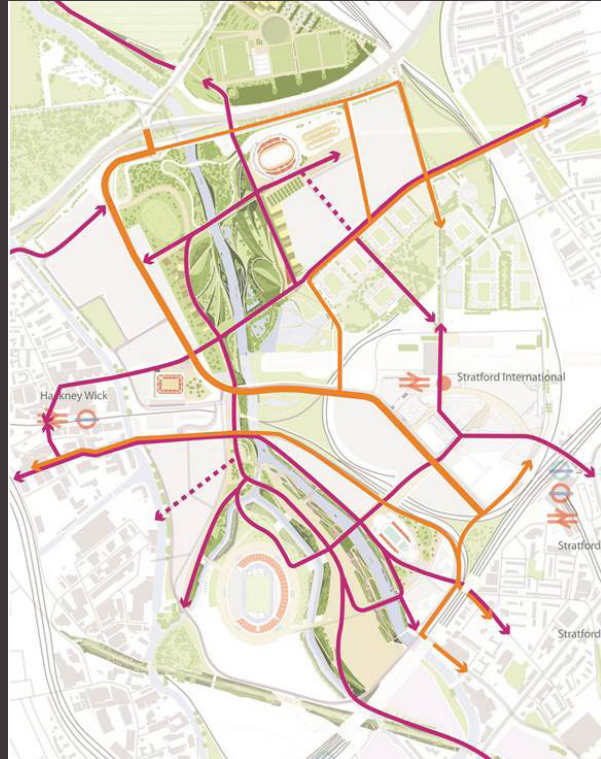
2012 Olympic

2014 Transformation



- Safe
- Welcoming
- Park extends to edge of site
- Permanent and temporary landscape

Connecting the Park



London 2012 Olympic Park



Legacy



Legacy



Legacy



Legacy

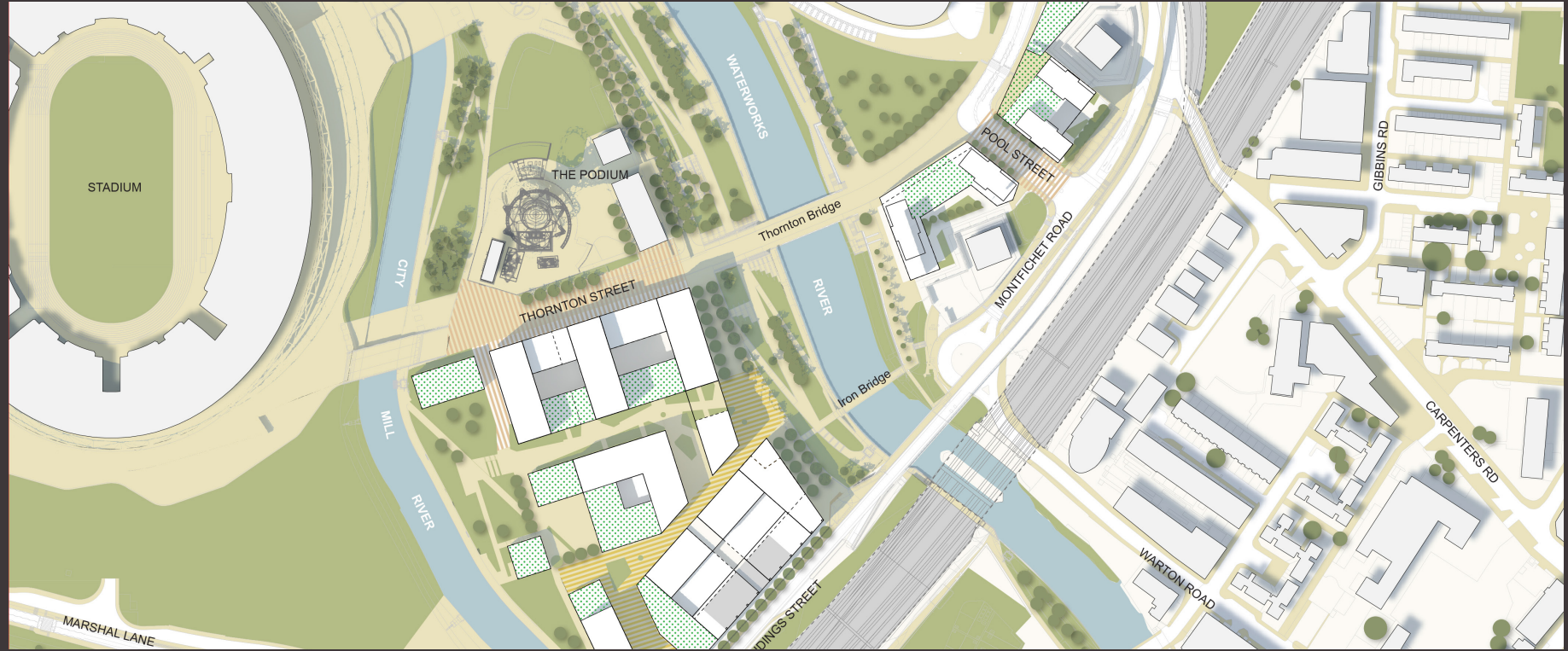


Legacy

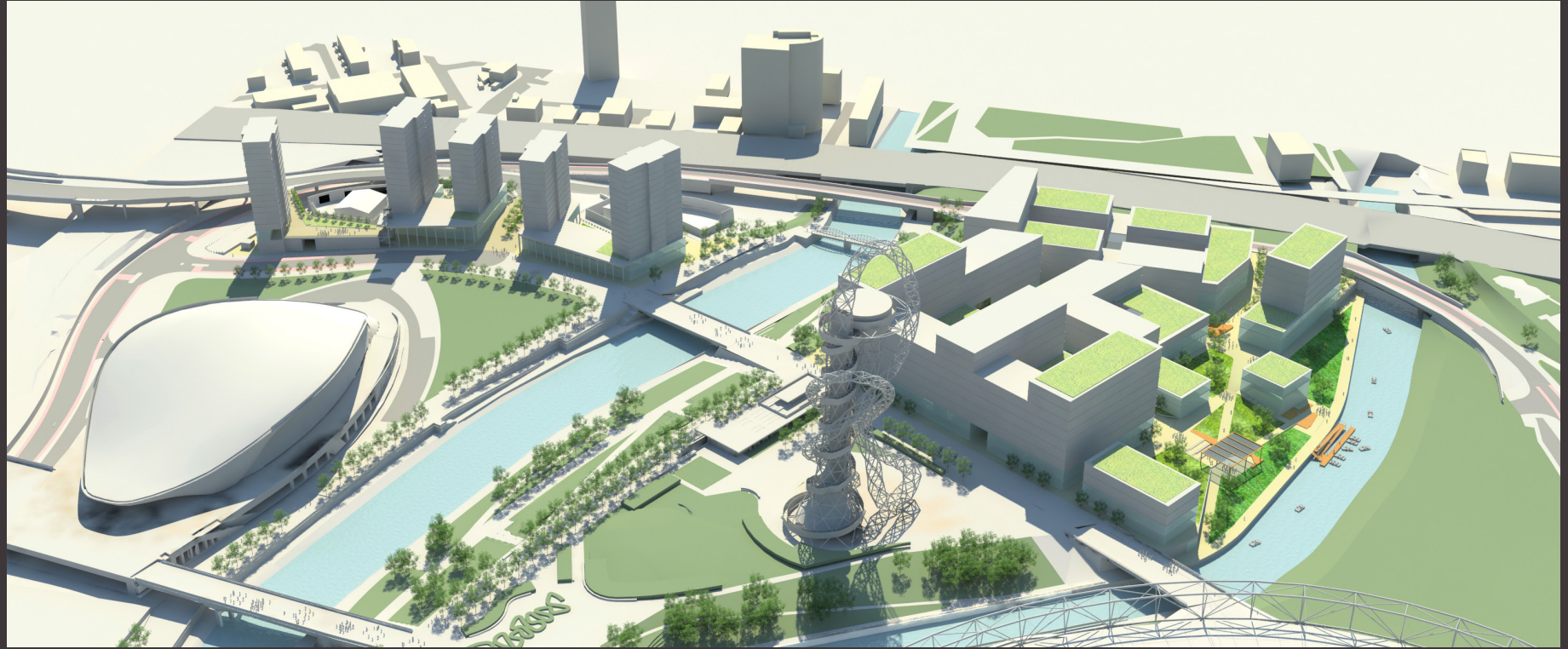


Legacy

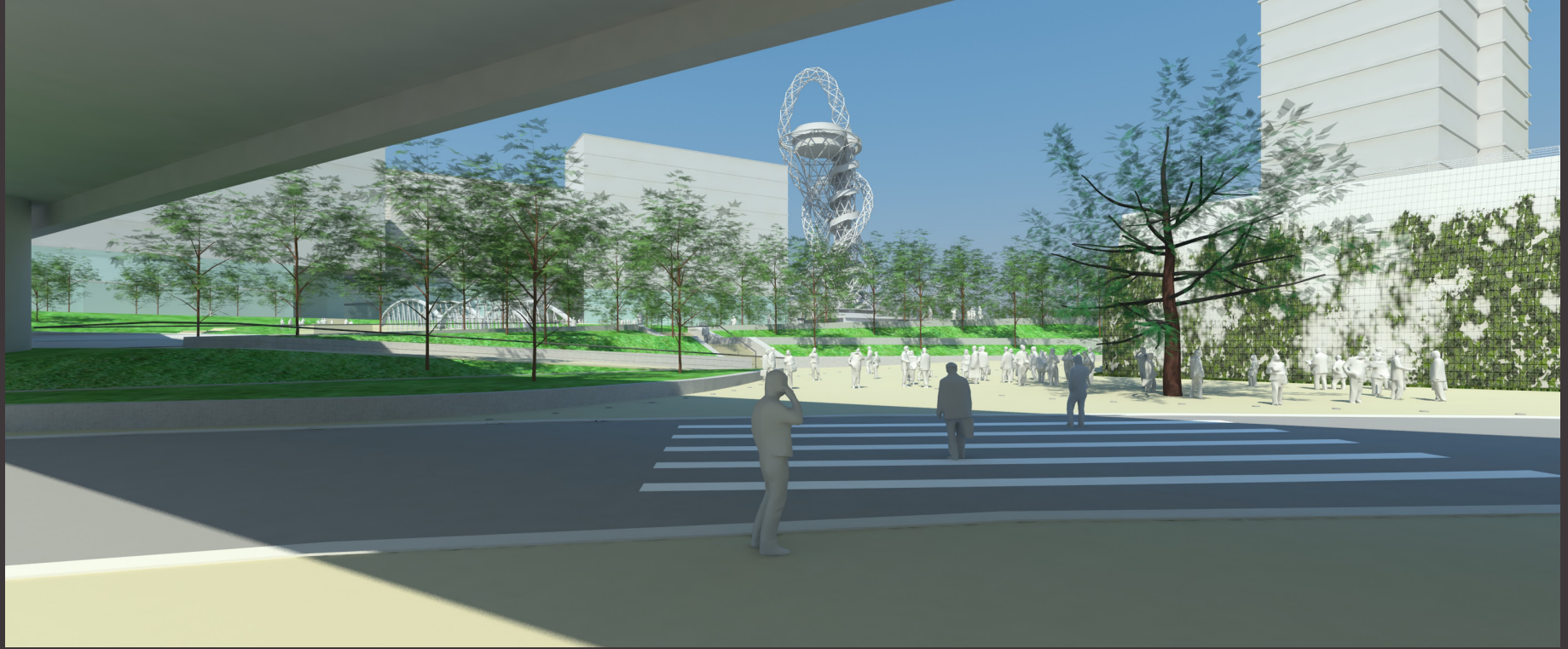




Legacy



Legacy



Conclusions

- Need to achieve a balance between sustainability and viability
- Changes to policy and regulation, but planning still important
- Taking a creative, collaborative approach can help to deliver high standards and add value
- Think holistically about the whole development, rather than 'add-ons' to achieve zero carbon

Thank You For Listening



LDĀDESIGN