



Post the greenest Olympics ever:
Are we nearer to Zero?
Sue Riddlestone, BioRegional

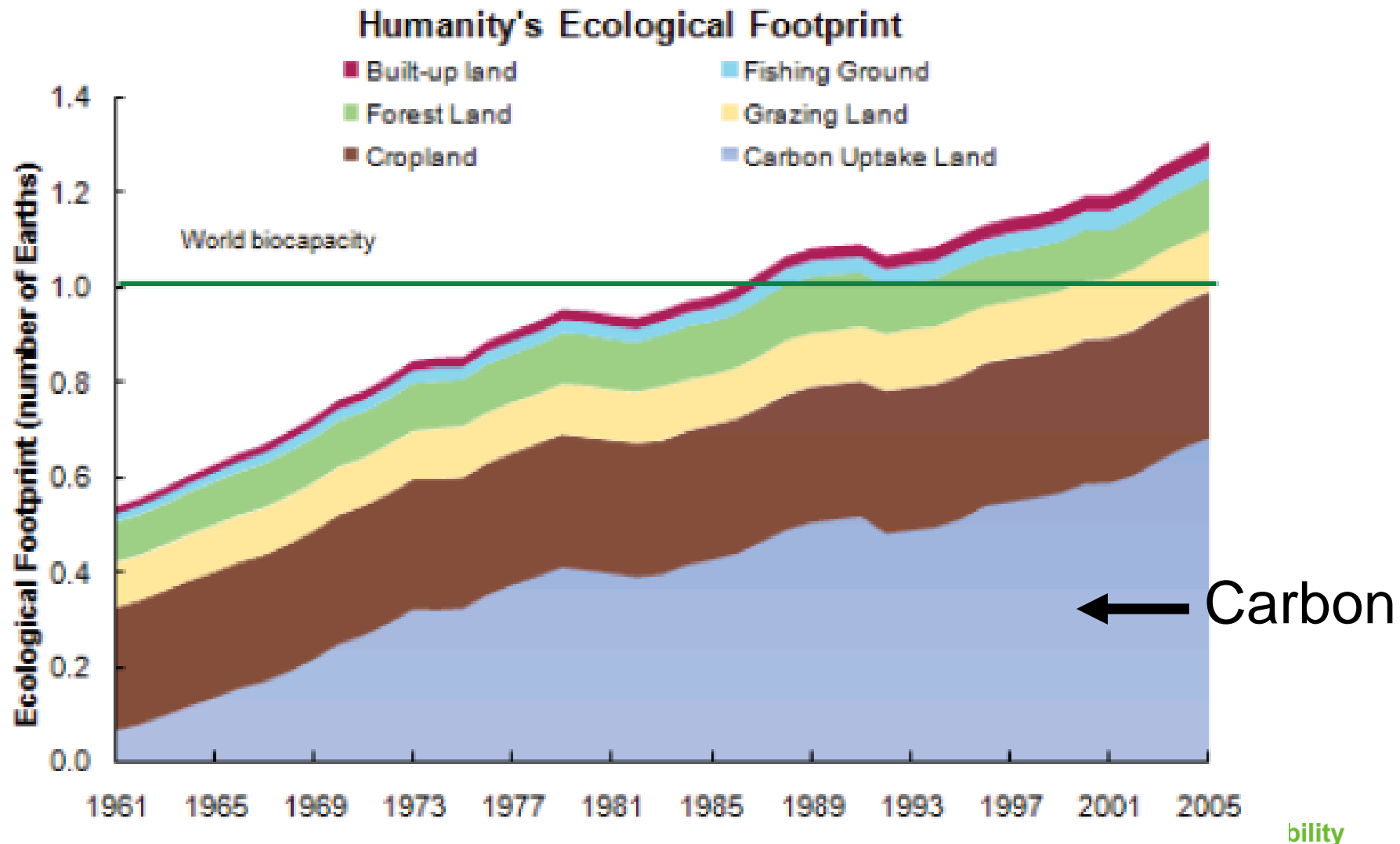


**BioRegional is a London based entrepreneurial charity which invents & delivers solutions for sustainability
Est. 1994 in UK. Established six associated companies and 6 sister organisations or reps in China, South Africa, Mexico, Greece, Brazil and North America**

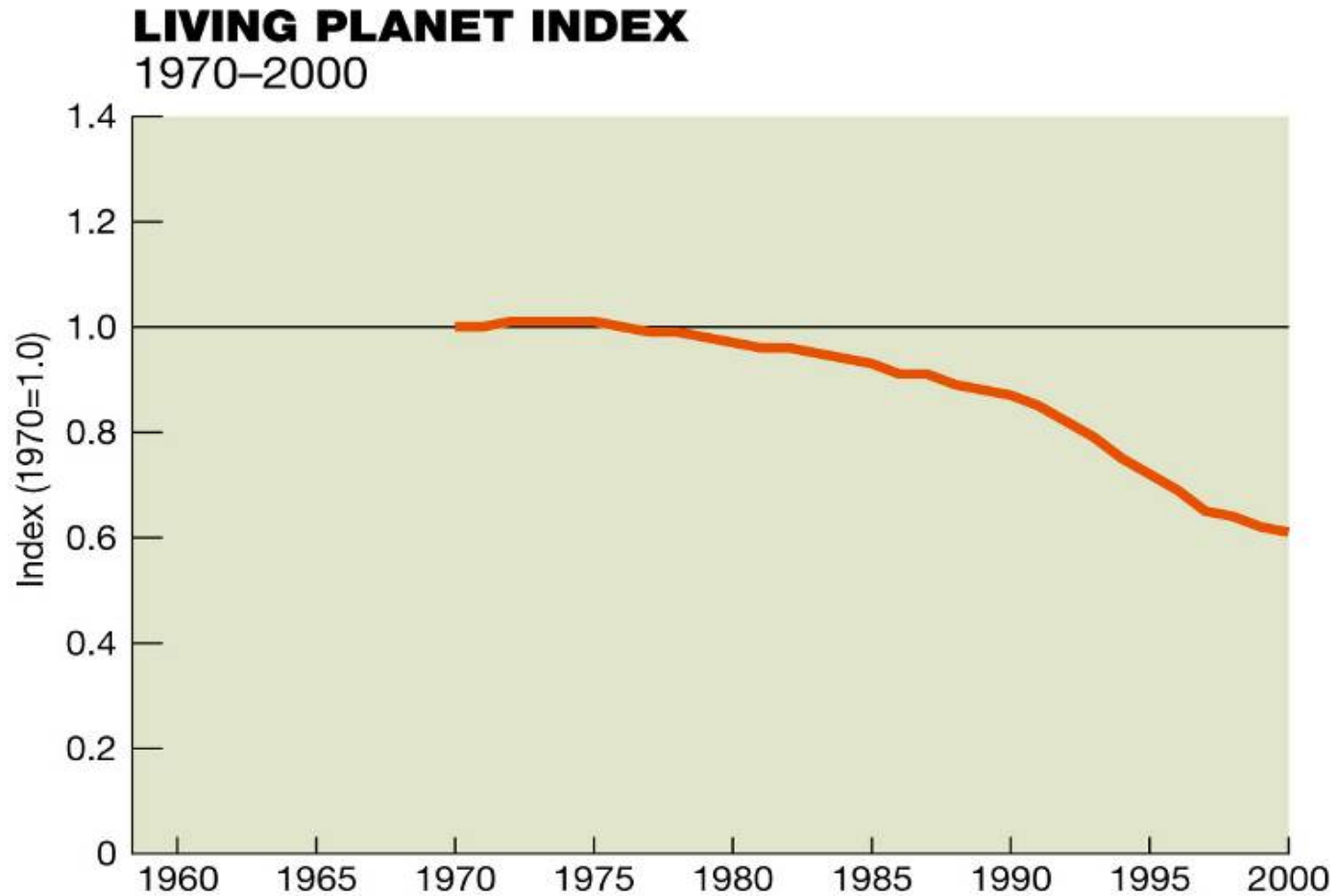
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Why do we talk about one planet living?



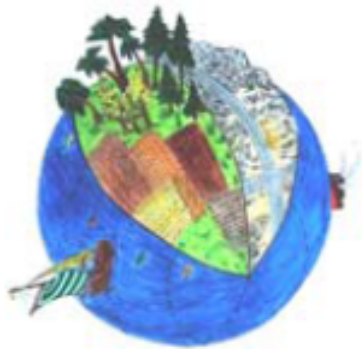
Decline of Biodiversity



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Our Ecological Budget



11.2 billion hectares



7 billion people

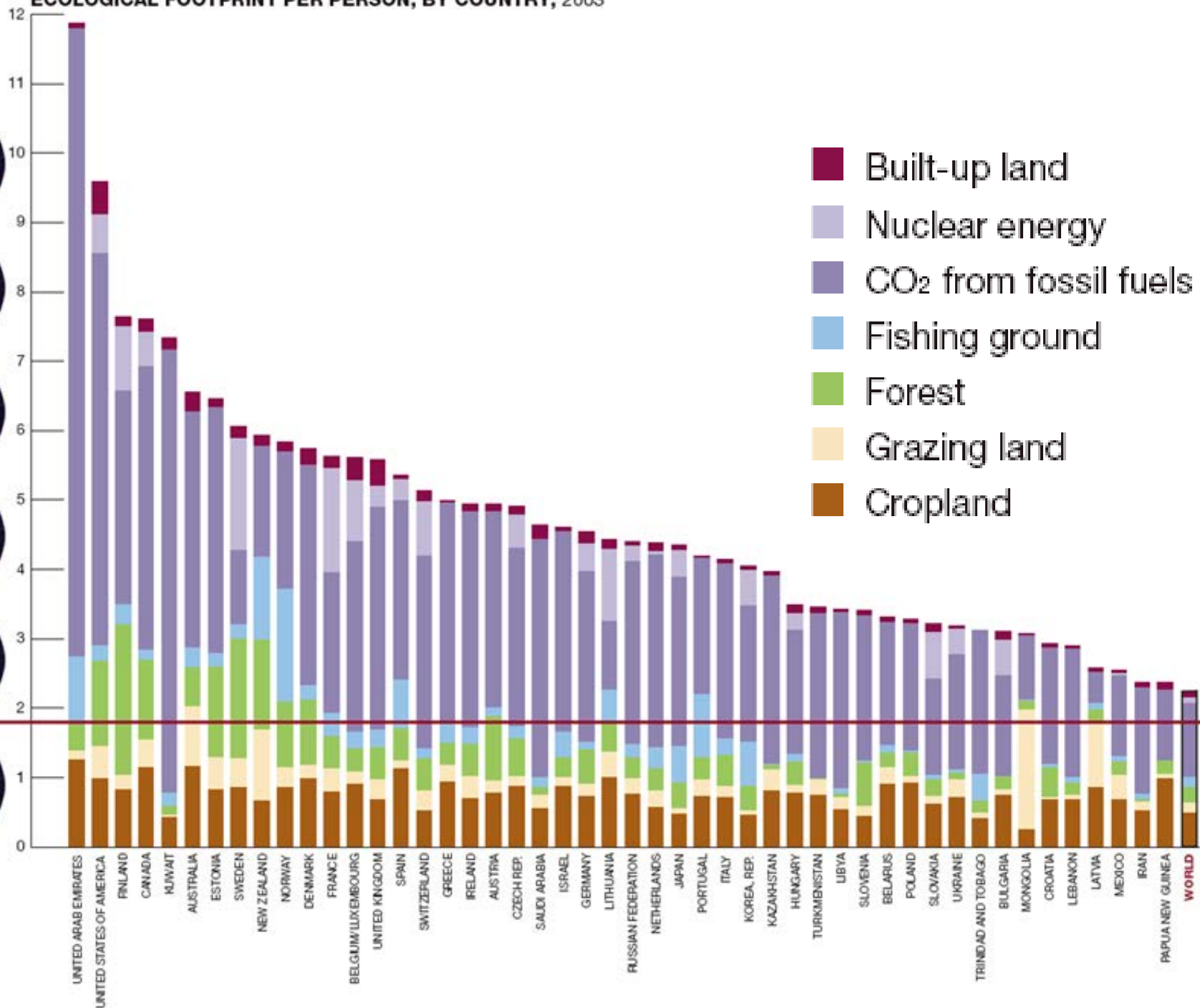
1.7 global hectares per person

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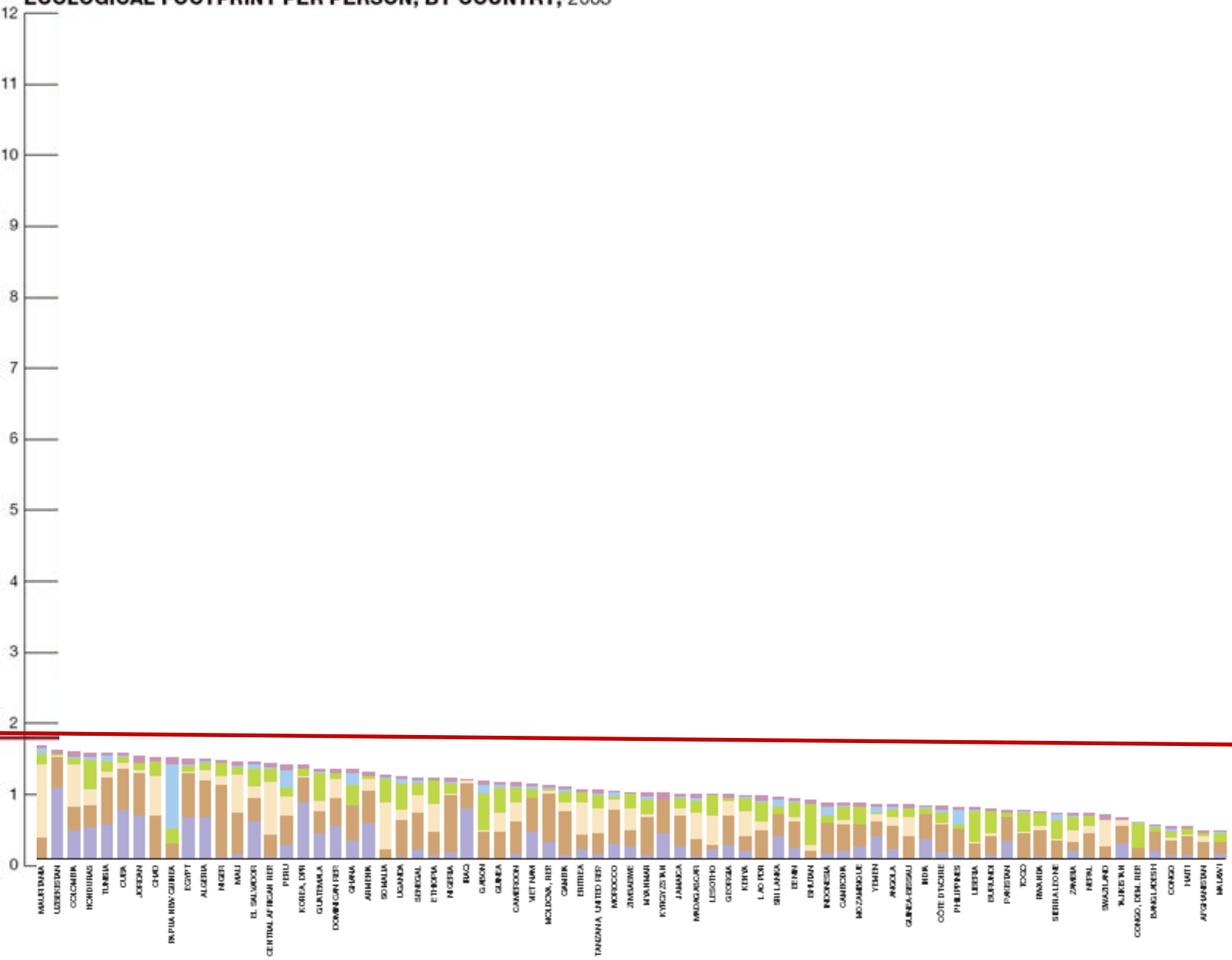
ECOLOGICAL FOOTPRINT PER PERSON, BY COUNTRY, 2003

2003 global hectares per person

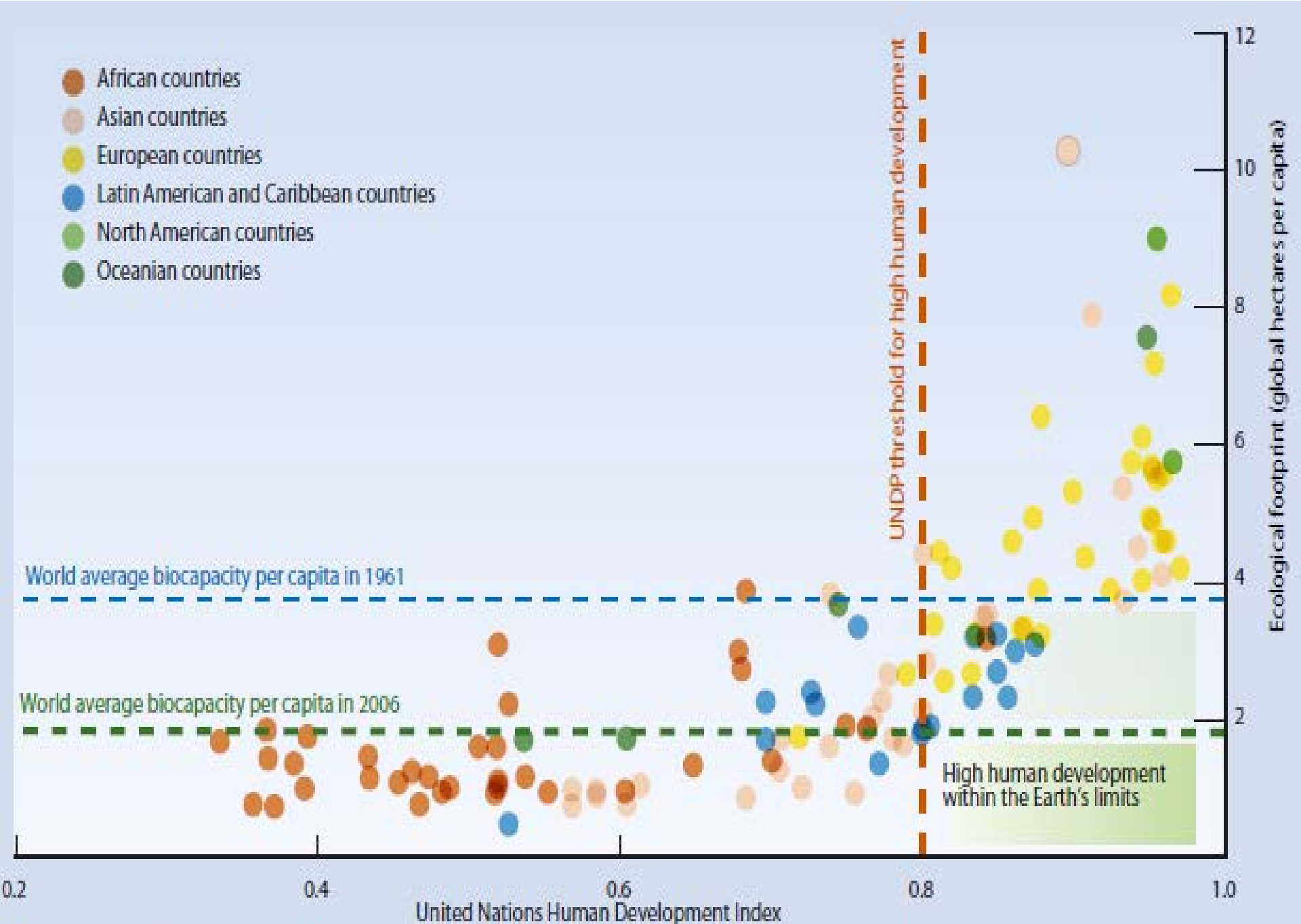


ECOLOGICAL FOOTPRINT PER PERSON, BY COUNTRY, 2003

2003 global hectares per person



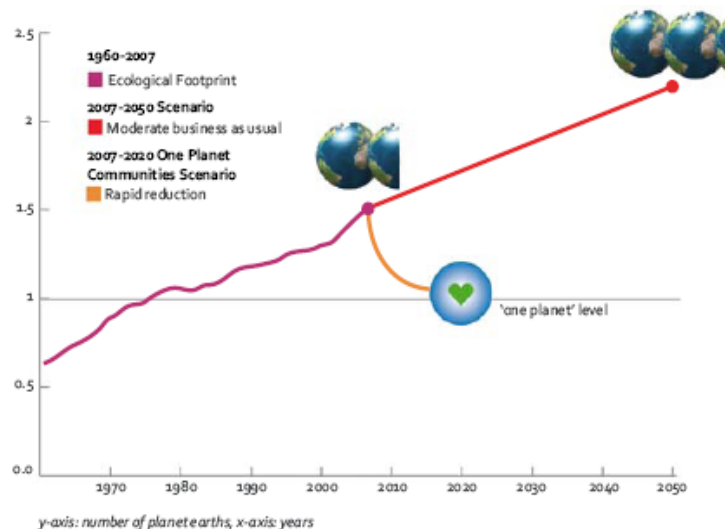




one planet living



A world where we can live happy, healthy lives within our fair share of the world's resources, leaving sufficient space for wildlife and wilderness.



- 1 Zero carbon
- 2 Zero waste
- 3 Sustainable transport
- 4 Sustainable materials
- 5 Local and sustainable food
- 6 Sustainable water
- 7 Land use and wildlife
- 8 Culture and community
- 9 Equity and local economy
- 10 Health and happiness

One planet living – it can be achieved!



- BioRegional projects and companies
- Local Paper for London (93% EF)
 - Local charcoal (85% transport CO₂)
 - BedZED eco-village (71% personal CO₂)

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Can be done city wide: 90% reduction in embodied GHG in London

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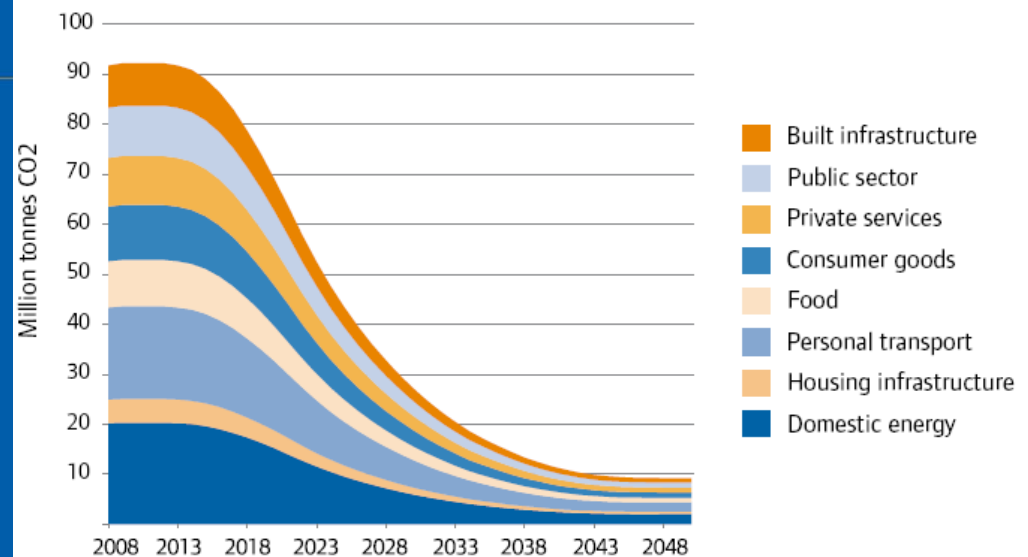
LONDON
SUSTAINABLE DEVELOPMENT
CONNECTION

Capital consumption
the transition to sustainable consumption and production in London



November 2009

Target reduction trajectory modelled in this study for London's emissions



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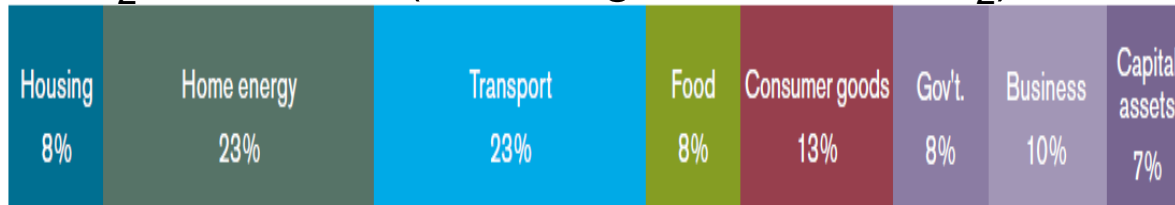
Where do our impacts arise?



Ecological Footprint of average UK resident: 5.45 Gha



CO₂ emissions (including embodied CO₂) of UK resident: 11.87 tonnes



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Ref: "What makes an eco-town" BioRegional & CABE

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One planet living at BedZED eco-village



Nicole's eco-footprint is 1.7 planets and her carbon footprint is 6 tonnes per year

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5.1 tons CO2 per person p.a.

- 50% building design and renewable energy :
 - biomass CHP
 - PV
 - in building efficiency/passive solar
- 44% of total carbon savings in *lifestyles*:
 - Transport
 - Waste
 - Food

**Lifestyles are *as important*
as green buildings**

An aerial photograph of a modern residential courtyard. The courtyard is paved with light-colored stone tiles and features several young trees and raised garden beds. A group of people, including children and adults, are gathered in the courtyard. Some are standing, while others are riding bicycles. A white car is parked on the left side. In the background, there are modern brick buildings with large windows and balconies. The scene is bright and sunny, suggesting a pleasant day.

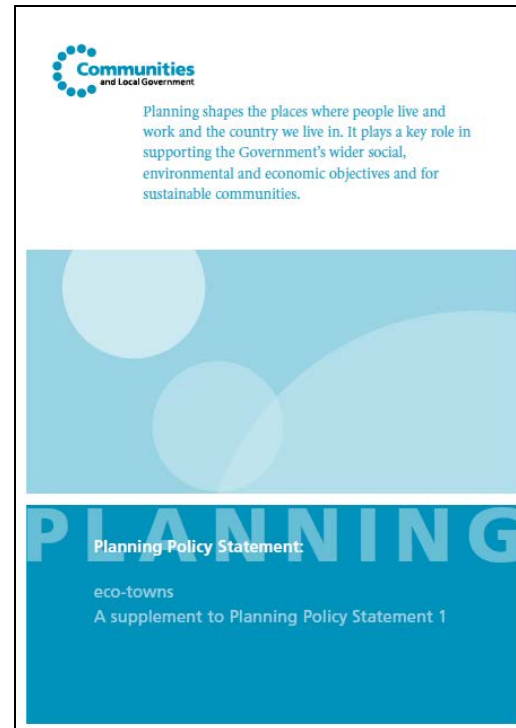
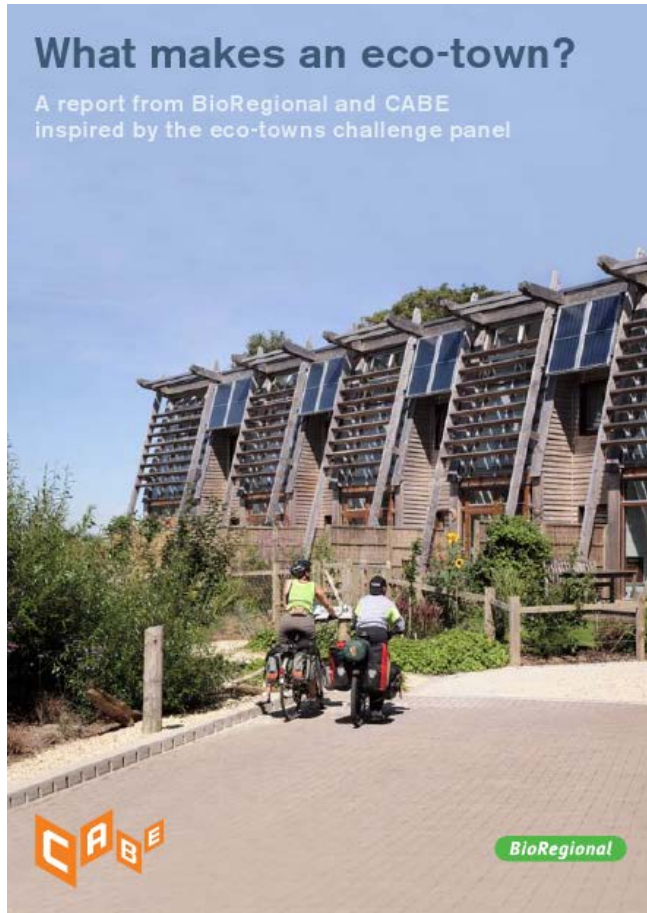
*"Social side is
spectacularly good"*

*"Nice community
spirit, non-
isolating"*

One Brighton – within normal range of build cost



Applying one planet thinking to eco-towns



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North West Bicester, UK
A2 Dominion



Riverside One, UK
BioRegional Quintain



One Planet Middlesbrough, UK
Middlesbrough Council



One Planet Sutton, UK
London Borough of Sutton



BedZED, UK
Peabody / BioRegional



London 2012 Olympic and Paralympic Games
London 2012



One Brighton, UK
Crest Nicholson
BioRegional Quintain



Masdar City, Abu Dhabi
Mubadala



The Hills, Guangzhou, China
China Merchants Property Development



B&Q One Planet Home, UK
B&Q plc



Petite Rivière, Canada
Groupe Pacific



Grow Community Bainbridge Island, USA
Asani



Sonoma Mountain Village, USA
Coddling Enterprises



Imbera
Queretaro, Mexico



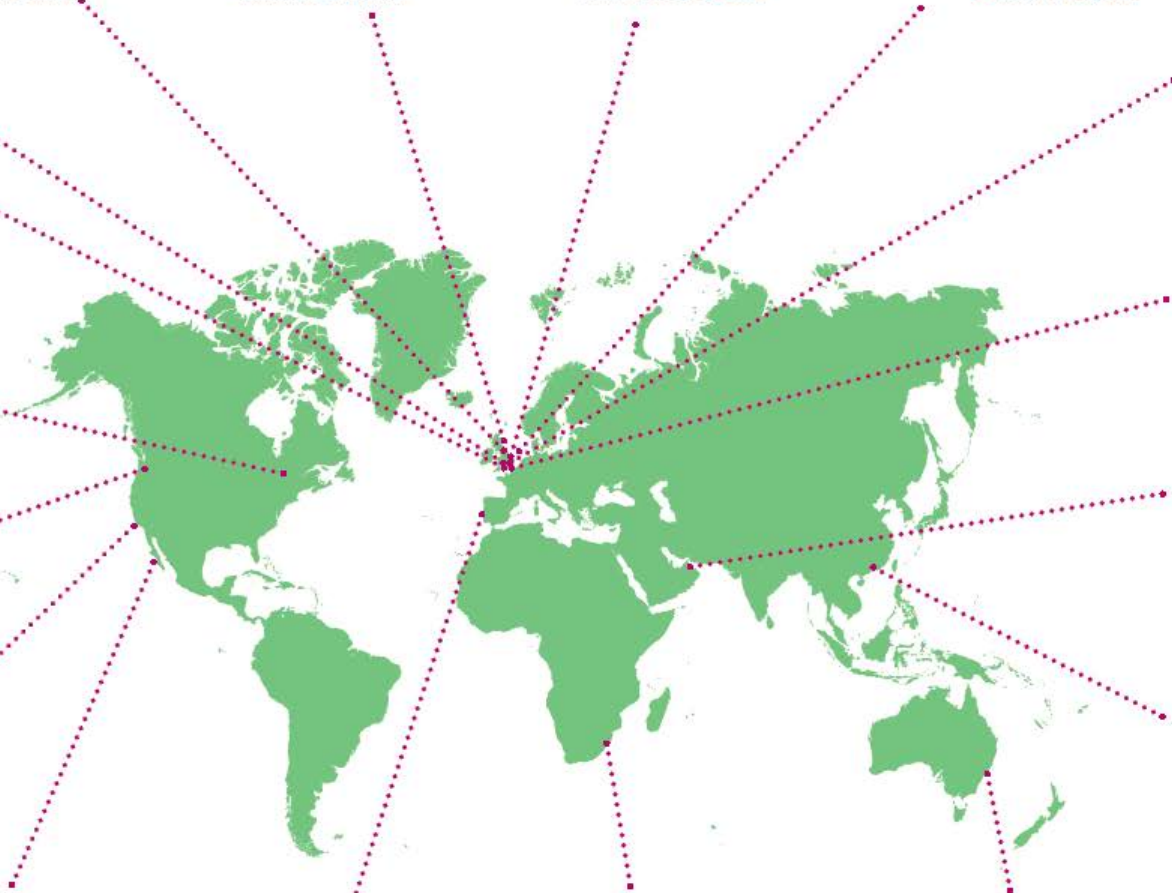
Mata de Sesimbra, Portugal
Pelicano



Ivory Park / Sibaya, South Africa
Johannesburg EcoCity Trust /
Tongaat Hulett Developments



Barangaroo, Australia
Barangaroo Delivery Authority /
Lend Lease







LONDON

SUSTAINABLE DEVELOPMENT
COMMISSION



Towards a One Planet Olympics



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We only have one planet; London 2012 will respect its ecological limits, its cultural diversity and create a legacy for sport, the environment and the local and global community.



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First sustainable Games

We want London 2012 to be the first sustainable Games, setting new standards for major events.

Being sustainable means thinking about peoples' current and long-term needs, improving quality of life, ensuring a healthy and thriving natural environment.

For the London 2012 bid, we have been working on an idea, developed with BioRegional and the 'One Planet Olympics'. This idea forms the core of our plans for sustainable development in London, more broadly, the way in which we can use the Games as a platform to highlight global issues such as climate change.

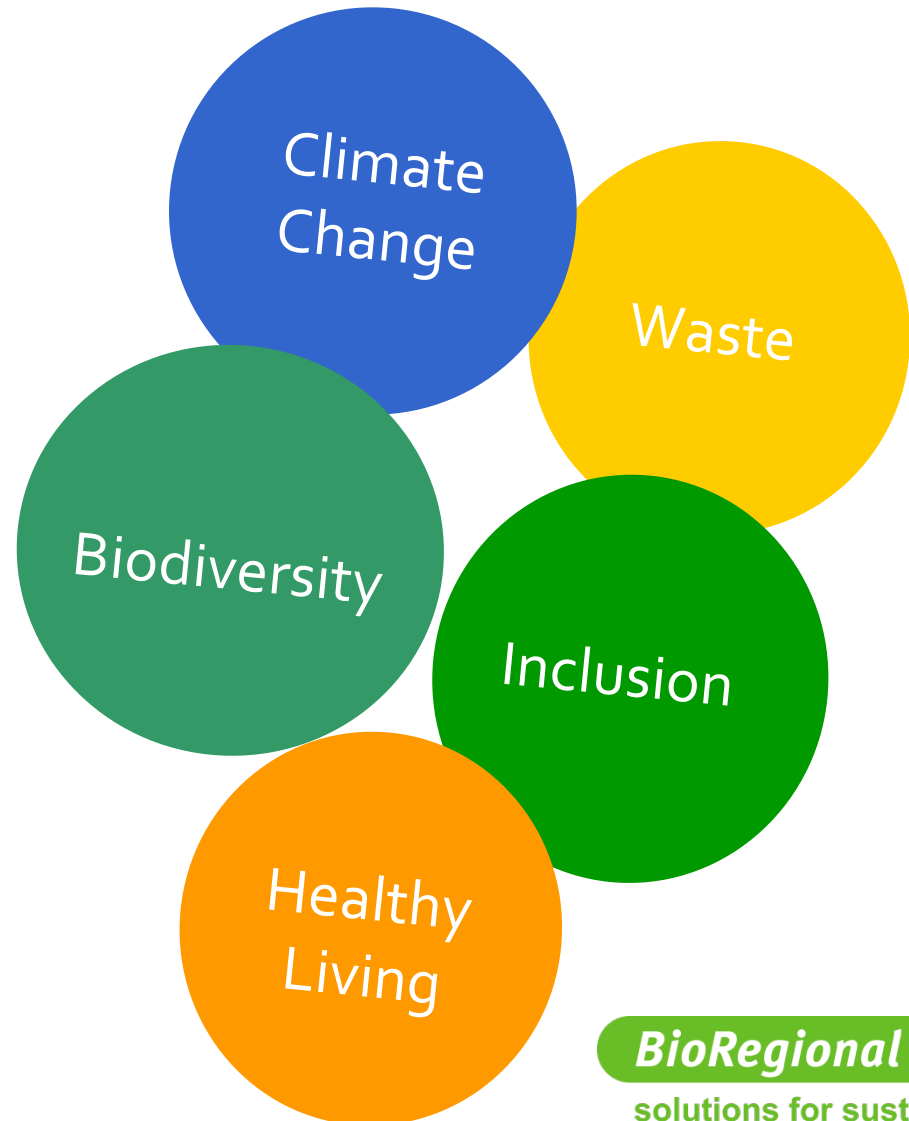
London wins the bid! July 6 2005



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London 2012 Sustainability Plan 2006



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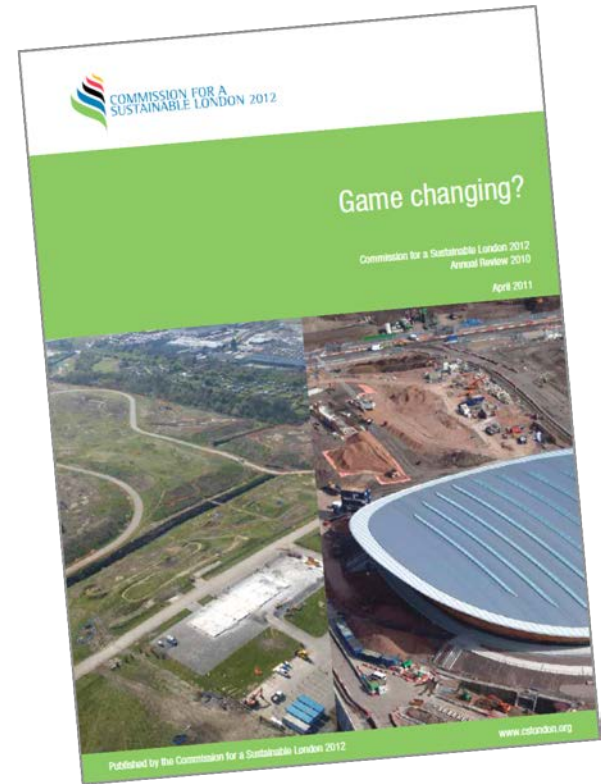
ODA 5 overarching themes, 12 objectives

	London 2012 overarching themes				
	Climate change	Waste	Biodiversity and ecology	Inclusion	Healthy living
12 Olympic Delivery Authority objectives					
Carbon	✓				
Water	✓	✓	✓		
Waste		✓			
Materials	✓	✓			✓
Biodiversity and ecology	✓		✓		✓
Land, air, water and noise			✓	✓	✓
Supporting communities	✓	✓			✓
Transport and mobility	✓			✓	✓
Access				✓	
Employment and skills				✓	✓
Health and well-being				✓	✓
Inclusion				✓	

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- Bid Commitment – est. January 2007
- Independent Assurance Body -The first of its type in the history of the Games
- Advised the Olympic Board and reported to the public across the entire Games programme.
- Over a dozen reviews and reports with over 200 recommendations



Early lessons (2007)

Demolition waste

Need contracts and systems
in place early

BioRegional -critical friend

Demolition waste now a
success story of L2012

Pre-demolition reclamation
audits of 200 buildings

Target 90% reused / recycled
- Achieved 98.5%

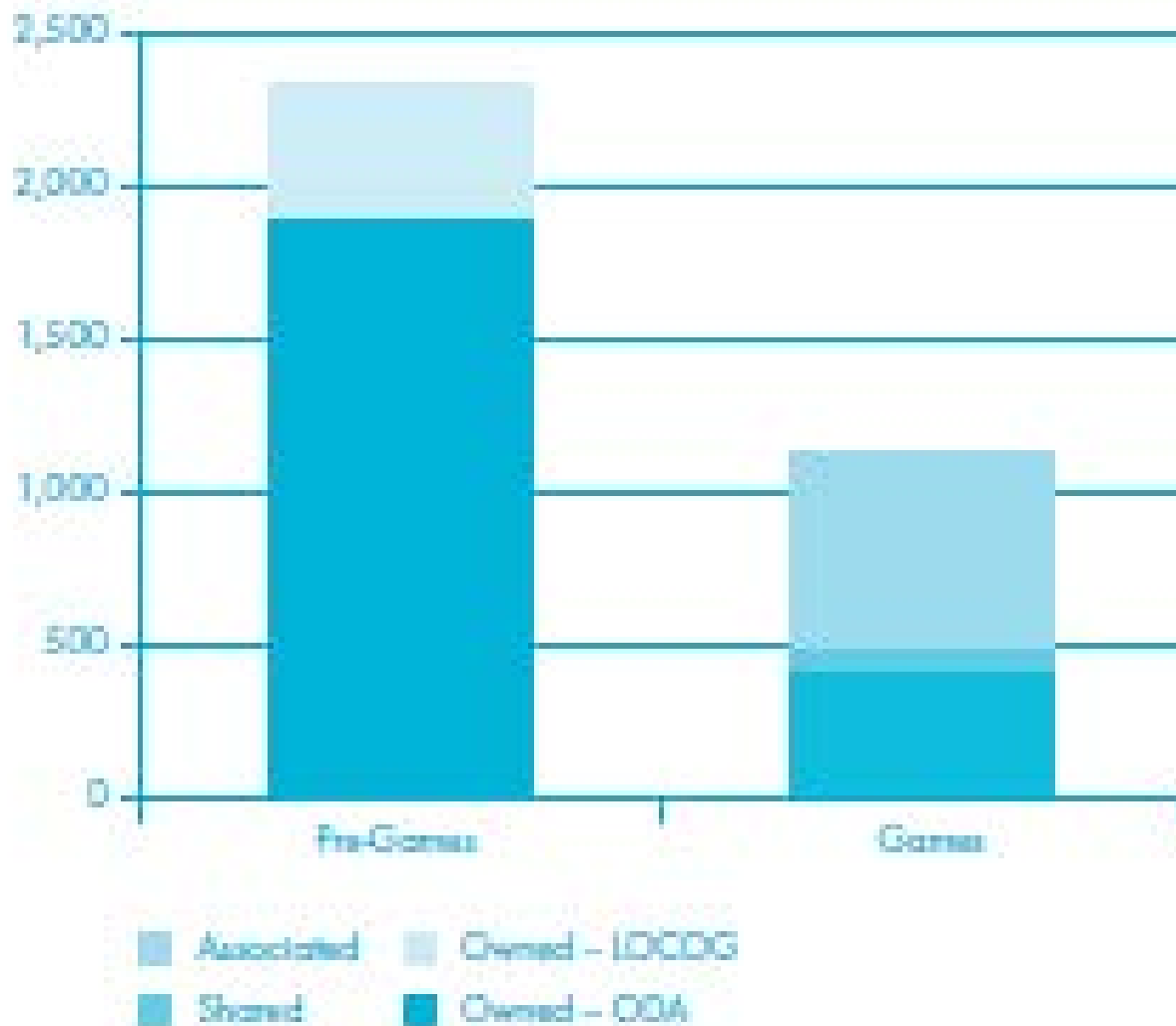
Four buildings re-located



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Carbon Footprint Study – informing action



Reference footprint:
3.4 million tnes CO₂e
Best Foot Forward

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Carbon
Footprint
Study
highlights
Top Five
emissions
sources

Emission sources	Carbon emissions	
ODA – owned	kCO ₂	% of ODA owned
Olympic Park works*	828	44%
Olympic Village	391	21%
Transport Infrastructure	161	9%
Media Centre	130	7%
Stadium	129	7%
LOCOG – owned	kCO ₂	% of LOCOG owned
Overlay	199	50%
IT services	50	13%
Transport services	34	9%
Travel grants	29	7%
Games workforce and athletes	16	4%
Other – shared and associated	kCO ₂	% of 'other' emissions
Transport Infrastructure	429	37%
Spectators – air travel	345	30%
Spectators – accommodation	102	9%
Spectator – car travel	68	6%
Media	66	6%

ODA Targets for venues

25% recycled materials by weight and 20% by value



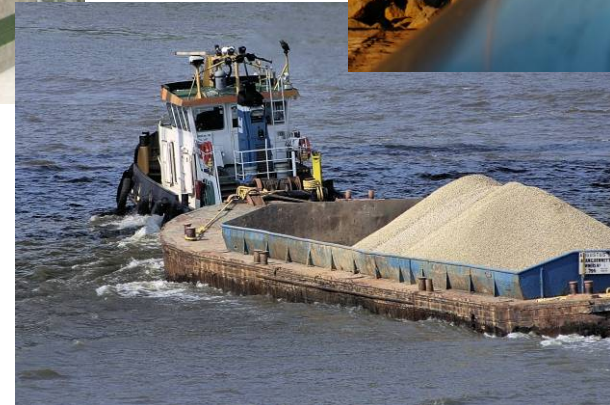
Minimize unhealthy materials



90% diversion from landfill



50% of materials to be delivered by sustainable means



100% Timber is FSC or PEFC with full chain of custody

80% of materials to be responsibly sourced



Ethical Trading Initiative

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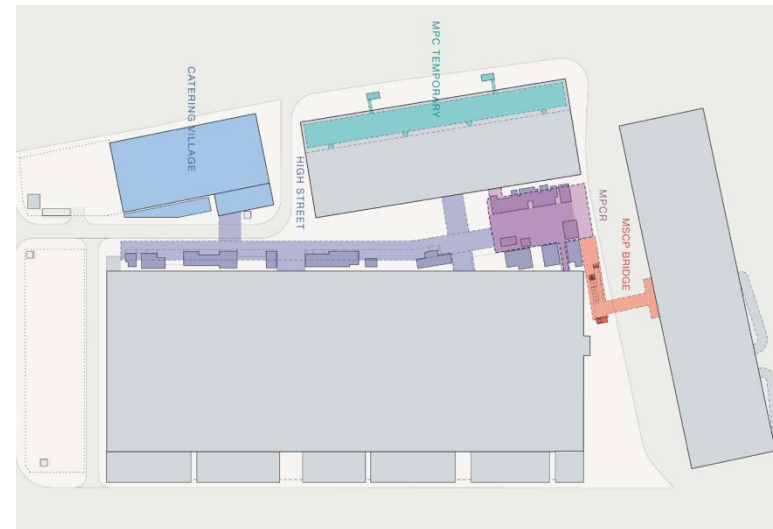
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Media Hub 7% of ODA carbon footprint



Media Hub – four elements

BioRegional worked as Sustainability Integrators for Carillion

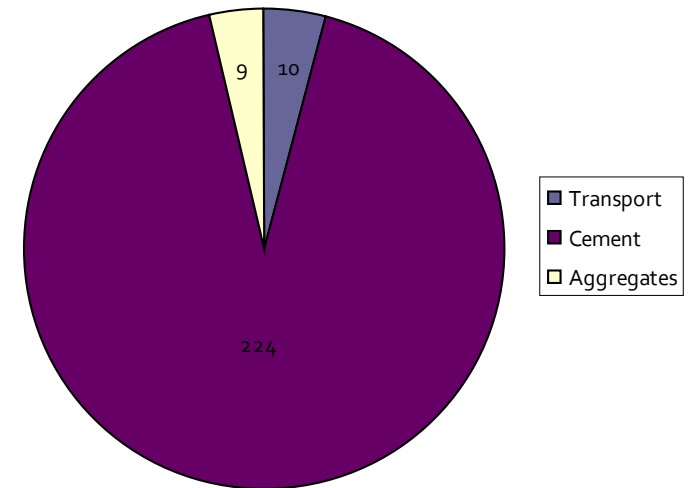


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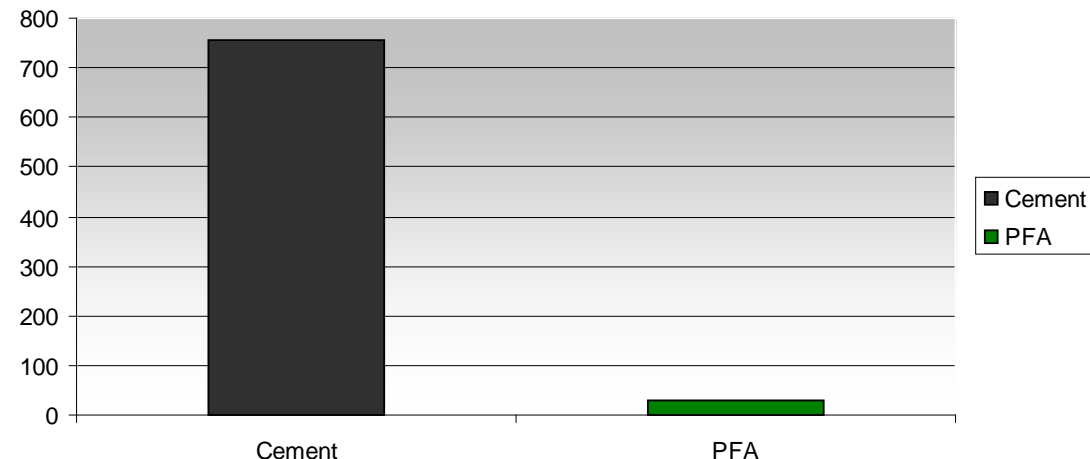
Concrete at Media Hub

- Concrete Embodied Carbon: 21% reduction
- 1,808 tonnes of cement saved (~1300 tonnes of CO₂)
- 7,455 tonnes of aggregates saved
- Transport
85% of the concrete mass delivered by rail

MPC Green Concrete Embodied Carbon (kgCO₂/t)



Cement vs. PFA - Embodied Carbon Comparison



Main Press Centre (MPC)

- 29,000sq m over four storeys
- 5,600 journalists,
- Concrete frame of 30,000 tonnes
- 'brown roof' of reclaimed gravel and logs
- 130 bird/ bat boxes for biodiversity
- Greener concrete mix in frame
- Carpet take back



International Broadcast Centre (IBC)

- 52,000sq m, two floors up to 10 metres high,
- 8,000sq m of offices over five floors
- 20,000 broadcasters
- 5 jumbo jets could fit wing-to-wing in the building
- Carbon offset for cladding
- Recycled aggregate
- Buy back scheme for air conditioning



Car Park & Catering Village

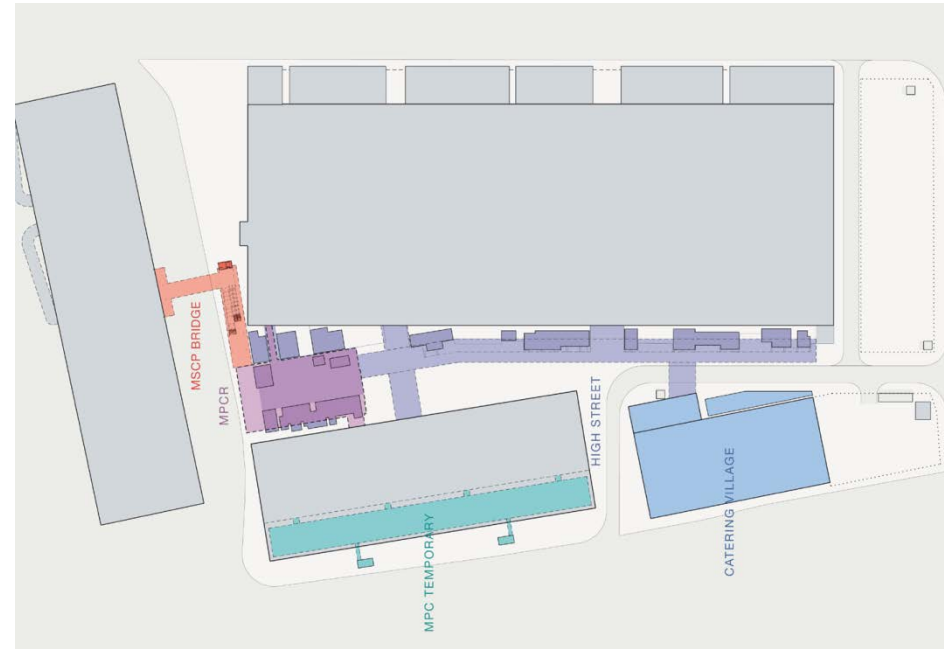
Car Park

- 1,300 space, 40,000 sq m
- Originally 50% temporary
- Hollow-core concrete planks – 30% less concrete
- CEEQUAL 'Excellent'



Catering Village

- 12,000 sq m , 4,000 seat
- Buy back for whole building !
- Linoleum flooring
- Plugs-in to district heat / cool system
- Large PEFC timber facade



Media Hub

- Exceeded all Olympic Development Authority targets
- Globe of Honour for British Safety Council
Environmental Audit
- SHELТ Environment Award 2011 by the ODA
- Full Carbon Footprint of project
- Highest waste segregation rates at the Olympic Park

Visitor & athlete experience



- Public transport games
- Volunteers
- Recycling 62% at Games time (100% diversion)
- Sustainable food
- Equality and access



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London 2012 Firsts & achievements

First..

- Independent assurance body
- Event management standard BS8901
- Carbon footprint
- Food strategy
- Report to UNEP GRI

Achievements

- 2 million tonnes of soil cleaned
- 98.5% materials reclaimed or re-used
- Largest urban park for 150 years
- 50% reduction CO₂ in building ops energy



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Carbon Footprint of London 2012 (Jan '13)

Figure 1: Original London 2012 reference footprint – ktCO₂e (2009)

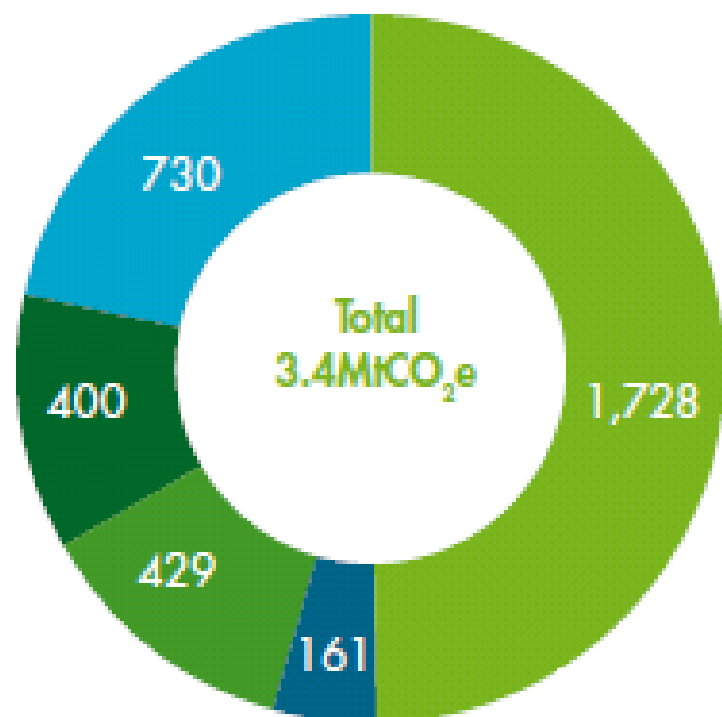
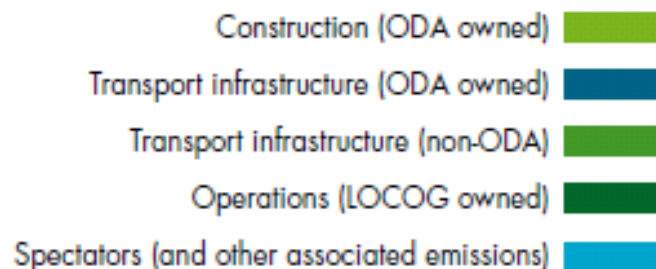
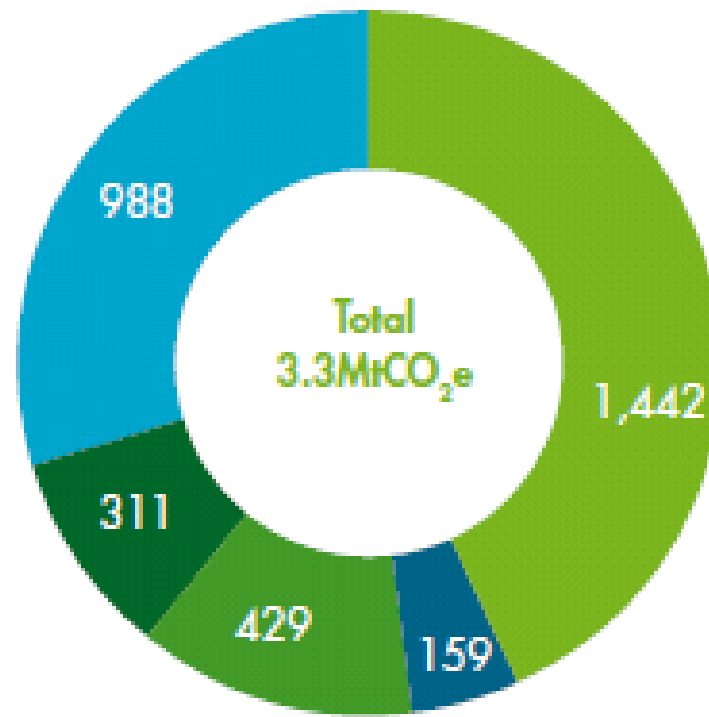


Figure 2: Actual measured London 2012 carbon footprint – ktCO₂e (2012)

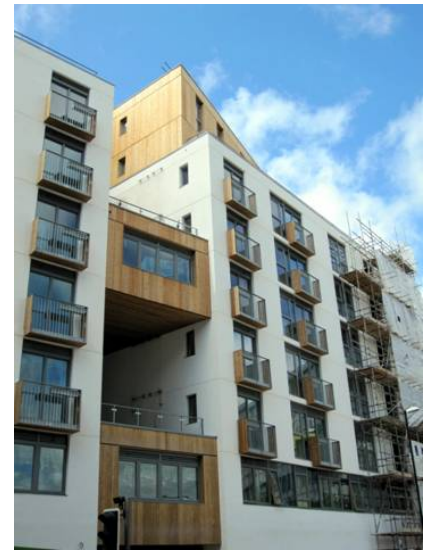


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Are we nearer to zero?

- Early commitment & leadership for projects
- Embodied carbon
- Sustainable living not just sustainable buildings
- Health and well being impacts
- All saves money



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