



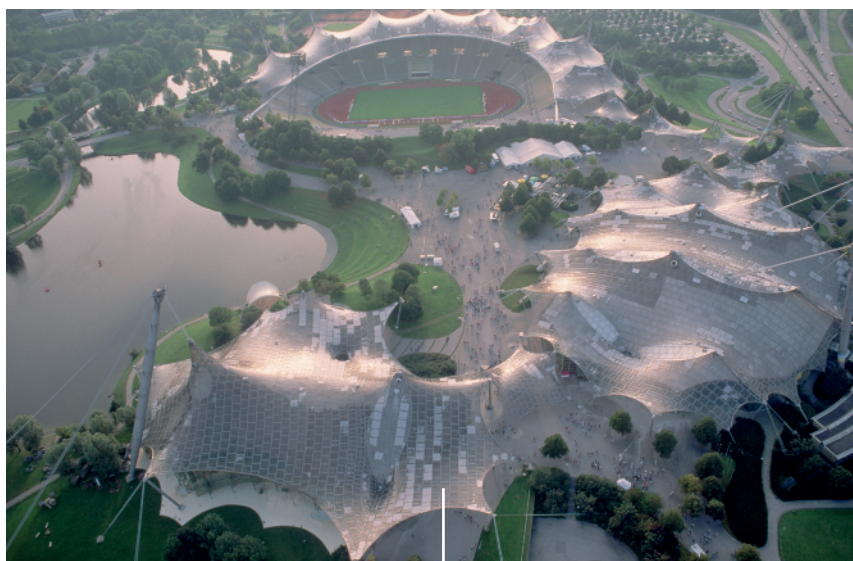
CHAPTER ONE

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Start with the Park

It was no accident that a new kind of park lay at the heart of London's bid for the Games in 2012, or that it was located in a largely underdeveloped and contaminated part of east London. A park based on One Planet Living principles of sustainable development would help to achieve many of London's long-term strategic planning and national policy objectives. It would also justify significant public investment in permanent venues and infrastructure to provide a lasting legacy for existing and future generations. Furthermore, it would contribute to the policy objective of the International Olympic Committee (IOC) to move towards sustainable Games.

Olympic and Paralympic Games can provide Host Cities with a rare opportunity to invest in large-scale infrastructure. More often than not this involves the creation of some form of Olympic Park. Beijing 2008 created a monumental campus, a park bound within it. Athens 2004 had architect Santiago Calatrava revamp an existing sports campus comprising major venues and other sports facilities. Sydney 2000 expanded Bicentennial Park through the conversion of an industrial wasteland into a connected sequence of wetlands, wildlife corridors and shoreline as the setting for its Olympic Park. Centennial Olympic Park is credited with the revitalisation of the surrounding urban area following Atlanta 1996. Barcelona 1992 – recognised as one of the most successful urban regeneration projects of the late 20th century – renewed Montjuïc as its Olympic Park, but more importantly reconnected to its waterfront through the development of the Olympic and Paralympic Village, new beaches, a promenade and a port. Munich 1972 converted a redundant airfield into its Olympic Park with a dramatic new topography and lake providing a contrasting setting for architect Frei Otto's venues, many of which were retained and continue to serve the city's citizens. Key members of the Olympic Delivery Authority (ODA) and its



The Olympic Park in Munich, Germany, built for the 1972 Games. It took five years to construct and is a classic example of a unified and homogeneous architectural and landscape design. It has become a popular and heavily used park, but at 85 hectares is much smaller than London's 250ha Olympic Park, reflecting the growth in scale of the Games since then.

The Olympic Park in Sydney, Australia, built for the 2000 Games. The entire parklands total over 450ha and are one of Australia's largest urban parklands, including existing regional and national parks and former industrial and military sites that were remediated for the Games.

consultant teams visited many of these past examples. They wanted to understand the lineage not only of Olympic Parks, but also of the great British tradition of public parks, and for combining city, engineering, architectural, landscape and garden design. The ODA commissioned landscape historian David Lambert to tell the fascinating story of the emergence of the public park in Britain, and the role and importance of landscape in the planning and design of British towns and cities, and what this might mean for the planning and design of a new kind of park for the 21st century – what was to become the Queen Elizabeth Olympic Park.¹

A GREAT BRITISH TRADITION

The first parks in the world designed specifically for public use were in England. They were designed in response to unprecedented industrialisation and urbanisation, the public health crisis that ensued, and a pressing need for recreational facilities. They were also designed to create the context for development and enhance land values. Derby Arboretum was the first, opened in 1840. London's Victoria Park, opened in 1845, is just



a 15-minute walk from the London 2012 Olympic Park, and was specifically intended to halt migration to west and north London following the recent construction of railways. It succeeded over time, becoming an exemplary neighbourhood park, and underwent a major refurbishment ready for 2012. Birkenhead Park, Liverpool, was opened in 1847, and is often cited as the inspiration for New York's Central Park that was opened a decade later.

Hyde Park, Regent's Park, St James's, Greenwich and London's other great Royal Parks characterise the city. All but Regent's Park are conserved royal hunting grounds with public uses added over time. Parks are common ground, accessible to all, where people can meet, greet, volunteer, hold fairs and festivals and create their sense of community. They can have quiet places for contemplation, active areas for recreation, and can give a place a sense of identity by linking it to its culture and history. They can be an educational resource for both adults and children, providing inspiration for art, or an outdoor laboratory for the study of the environment and natural sciences. They can be havens for wildlife, providing a link between the urban and abstract, the environmental and natural. Parks also improve health and well-being, offering recreational facilities for the use of communities. One of the arguments for Victoria Park made in 1839 by the Registrar of Births, Deaths and

Victoria Park in east London was first opened in 1845. It was one of the world's first public parks, embracing social, health and amenity objectives that are similar to those for all public parks of today, including the Olympic Park. One major difference is the overarching sustainability objectives that are embedded within the plans for London 2012.



Marriages for Bethnal Green was that 'a park in the East End of London would probably diminish the annual deaths by several thousands ... and add several years to the lives of the entire population.'² Natural England, the Government's adviser, documented the role of the natural environment in maintaining healthy lifestyles in its 2009 publication *Our Natural Health Service*. It noted that people who 'lived furthest from public parks were 27 per cent more likely to be overweight or obese'; and that 'children able to play in natural green space gained 2.5 kilos less per year than children who didn't have such opportunities'. They estimated that 'for every £1 spend on establishing healthy walking schemes, the NHS could save £7.18 in the cost of treating conditions such as heart disease, stroke and diabetes'; and that 'if every household in England were provided with good access to quality green space it could save an estimated £2.1 billion in healthcare costs.'³

Parks are also economic assets, creating attractive areas for people to move to and businesses to invest in, uplifting property values in the process. For example, within 15 years of New York's Central Park being completed, property values within two and a half blocks increased nine times while in the rest of New York City they only doubled.⁴ Another North American example is Chattanooga, Tennessee, where, since the early 1980s,

Hyde Park in central London was first opened to the public in the 1630s. It was one of the earliest Royal Parks and was originally a hunting ground for Henry VIII before being established by Charles II as a forum for military reviews and fashionable promenading.

US\$356 million has been invested by the public and private sectors in redeveloping the town's riverfront. In the eight years between 1988 and 1996 the number of businesses and full-time jobs in the district more than doubled, and assessed property values went up 127 per cent. Over the same period, the annual combined city and county property tax revenues went up US\$592,000, an increase of 99 per cent.⁵

In response to continuing urban squalor and overcrowding caused by industrialisation at the beginning of the 20th century, Ebenezer Howard published *Garden Cities of Tomorrow*. Garden cities were intended to be self-sustaining communities that provided energy, food, work and civic activities, and were connected by public transport – the first conceptualisation of 'a balanced ecological town'.⁶ Public parks, open spaces and the public realm were the 'formative structure' of the garden cities, the most notable example of which is Letchworth, designed by Parker and Unwin, the leading architects of the movement. Small-scale communal space, pedestrian routes, street planting, a green belt and a coherent green network inspired town planning around the world. The evolution of town and country planning continued in the first half of the 20th century and led to what landscape architect Hal Moggridge termed 'landscape without boundaries'.⁷ Examples include Sir Patrick Abercrombie's proposals for a connected park system in Sheffield, and his similar scheme for the County of London, which proposed connecting the Thames to the green belt. The latter laid the foundation for London's Green Grid to which the Park contributes. Later in the 20th century, at Harlow New Town, Sir Frederick Gibberd based his town plan on open spaces running from the rural edge to its centre. This led to the idea of what landscape architect Sir Geoffrey Jellicoe memorably termed 'the city as total landscape', probably best seen in the new town of Milton Keynes.⁸

With the growing ecological awareness of the last 40 years, the role of strategic thinking to support individual parks has been recognised as critical, and this has led to a greater understanding of parks as part of greenspace systems and ecological processes. The vision for the South Essex Green Grid was 'an environmental infrastructure that promotes the establishment and management of appropriate character settings and provides the context for development over the next 100 years ... a living system threading through the urban and rural landscape providing clean and healthy air, food, water, energy, minerals and materials and beautiful places to escape, relax, learn and enjoy for existing and future communities and investors.' It recognised that this was 'a major and radical vision which placed landscape at the heart of the development process, and environmental process at the heart of sustainable development and the economy.'⁹ The Government appointed both architect Sir Terry Farrell and the Commission for Architecture and the Built Environment (CABE) to develop this vision, drawing together all the Green Grids into a framework for the Thames Gateway, a national government priority for regeneration stretching 70 kilometres (40 miles) from Tower Bridge to the mouth of the estuary. The Thames Gateway Parklands is an ambitious vision of a multi-functional 'working landscape'.¹⁰

While the Park will be measured against the timeless objectives of public park, city and landscape design, there were two other overarching objectives: sustainability and legacy. This would be the first Olympic Park where sustainability and legacy underpinned everything – location, funding, masterplan and the design of the venues and infrastructure. It would be the first that was masterplanned ‘backwards’ from a vision of the Park some 25 years hence where vibrant, mixed communities would live, work, play and stay. Using One Planet Living principles to drive sustainability, it would be a Park where the consumption of energy and water and the generation of waste were all minimised not only in its use, but in its construction as well. All the homes would be super-efficient, light and airy, and with a high proportion made available to people of all income levels. There would be an academy catering for children from kindergarten to sixth form available from day one. Public transport would connect neighbourhoods as easily to Europe as to the rest of London. World-class sports venues for swimming, cycling, hockey, tennis, athletics and more would be on the doorstep. Walking or cycling to and through new and existing neighbourhoods – and beautiful parklands and gardens with woodlands, wetlands and meadows teeming with wildlife – would be easy and natural. Parkland cafes would serve coffee and cakes,

Old Ford Lock at the southern edge of the Park on the river Lee Navigation. Named after a natural ford that originally crossed the uncanalised river Lea, the lock was at the heart of a key transport corridor that served the industrial expansion of the area, proving an important commercial network linking the Thames to Hertfordshire and Essex.



boating and kayaking would take place on the waterways. There would be festivals, fairs and events put on to suit all ages, tastes and interests. Allotments and community gardens would provide locally grown food. This new 21st-century, sustainable Park at the heart of the Games would see investment in city-scale design and infrastructure, developing those great British traditions not only for public parks and town planning, but also for engineering as exemplified by, among others, Thomas Telford, Isambard Kingdom Brunel and Joseph Bazalgette who respectively built fully functional infrastructure to connect and serve local communities of the time.

Aerial photograph looking north from the river Thames along the Lower Lea Valley.

Taken in 2003 and including East India Dock Basin in the foreground, it illustrates the mosaic of industrial and commercial land uses that flanked both sides of the river Lea.

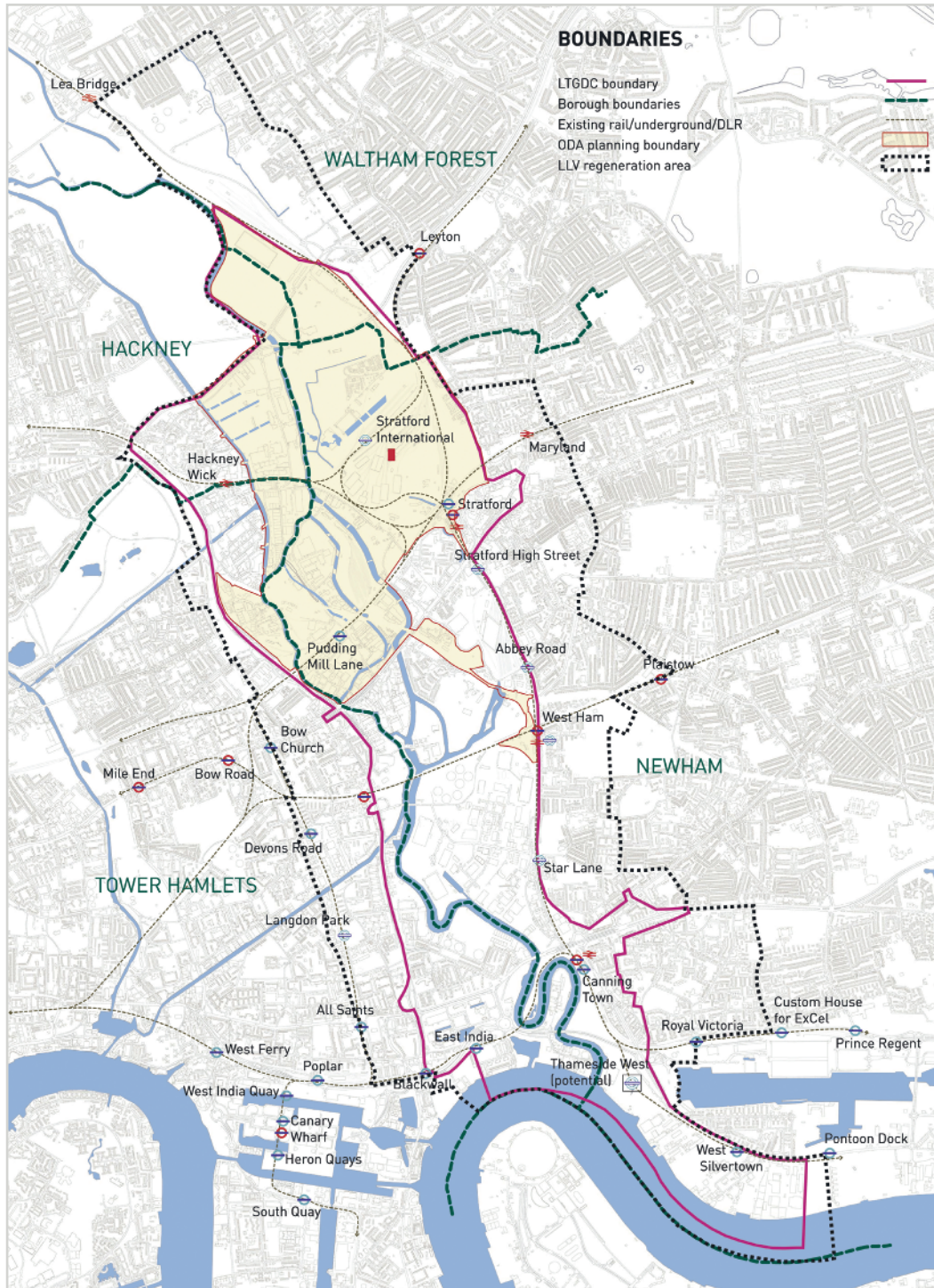
WHY EAST LONDON?

The Romans sailed up the river Thames and founded Londinium around AD 50. It grew and prospered, overtaking Colchester as the capital of Roman Britain. Since then, the Thames has powered London's economy and global outreach. The 'East End' extends from the walls of the City of London, built by the Romans around AD 200, to the river Lea which the Park straddles. 'East London' is not the same as the 'East End': it is the broader area extending now almost to the M25 motorway that girdles the greater London metropolis. Before the 19th century the eastern walls of the City of London were dotted with a series of hamlets – hence the borough of 'Tower Hamlets' that borders both the City of London and the Park.¹ Powered by industrialisation, the City of London began to develop rapidly, and in the late 19th century overcrowding became a serious problem. St Katharine Docks, designed by Thomas Telford and opened in 1828, were the first to be built on the Thames. Their construction displaced more than 11,000 inhabitants and, alongside construction of the railways, exacerbated overcrowding in the city leading to further expansion eastwards.

As trade increased exponentially, and ships grew in size, successive docks were built eastwards to accommodate them. Wapping, followed by Limehouse, East and West India, Millwall, Surrey and the Royal Docks were built and all required labour. The need was for casual labour only, which was also poorly paid and, as a consequence, crowded slums arose without sanitation or water. Charles Dickens wrote of the desperate and destitute in *Oliver Twist*, *Our Mutual Friend* and other novels, based on his experiences of the East End where his father had a sail-making shop. The Peabody Trust, the modern-day partner with BioRegional for the BedZed One Planet Living development in south London, was founded by the eponymous American philanthropist in 1862 to clear the slums and provide housing for the poor. The arrival of Huguenot weavers at the end of the 17th century presaged successive waves of Irish, Jewish, Russian and, most recently, Bangladeshi and other immigrants to east London. Each wave contributed to the rich cultural melange – one cannot now fully experience the East End without a visit to Brick Lane's curry houses, tellingly portrayed in Monica Ali's novel named after the much-visited street. East London continues its historic role of accepting immigrants from far and near. It has one of the most diverse populations anywhere in the world, with more than 160



languages spoken within the boroughs surrounding the Park. Just under eight per cent of the UK's population is from non-white ethnic groups, compared to around 30 per cent of London's, and 40 per cent of the population of the boroughs surrounding the Park. Walking east London can feel like walking the world.



The Park located within the Lower Lea Valley Opportunity Area Planning Framework (LLV OAPF) area, published in January 2007. The designated site for the Park is at the intersection of four London Boroughs: Hackney and Tower Hamlets to the west and Waltham Forest and Newham to the east.

Poverty and overcrowding remained problems into the 20th century, which the London County Council tried to address through the construction of large estates of council housing. During the Second World War the docks, railways and industry in the area were a constant target for aerial bombardments, devastating large sections. The Royal Docks were the last to be closed within London in 1980, ceding to Tilbury Docks 18 kilometres (11 miles) downstream of the City of London. The construction of the London Gateway port 40km (25 miles) east of the City began in 2010. One of the biggest in the world, capable of handling the largest container ships, it reinforces the importance of the Thames, its estuary and London's pre-eminent role in the national economy. The continuing social, economic and environmental problems of the area saw the establishment of a succession of Government-funded public corporations intended to regenerate east London and its docklands: the London Docklands Development Corporation in 1981, wound up in 1998, and the London Thames Gateway Development Corporation (LTGDC), founded in 2005, and whose functions were being transferred to the London Legacy Development Corporation and to the boroughs by the coalition Government from 2011.

The Park sits at the junction of the boroughs of Tower Hamlets, Newham, Hackney and Waltham Forest. At the time of the bid, the first three of these boroughs were in the most deprived five per cent in the country. Nearly 30 per cent of all households in these boroughs were workless, compared to 18 per cent of all households in England, and nearly 20 per cent in London. Each had only about 55 per cent of their population of working age in employment. There was a continuing housing shortage and the quality of the stock was poor, with a higher than average number of homes being rented social housing. The link between poor-quality jobs, casual labour and poor housing continued more than 100 years after the publication of Dickens's novels and Peabody's philanthropy. More than 60 per cent of the households within the area were flats, maisonettes or apartments, and therefore less likely to have access to their own private garden. A quarter of the land within the area of the Park had poor access to parkland and nature.¹² Education standards were significantly lower than the UK average. Crime rates were higher, 'postcode wars' prevalent. Fewer than 10 per cent of the population was aged over 65 in three of the boroughs, compared to a national average of 16 per cent. But there was a high proportion of young people, 39 per cent of the people aged less than 35 years, compared to a national average of 31 per cent. The high numbers of young people compounded and concentrated the impact of high youth unemployment, creating a sometimes febrile atmosphere, evidenced by the summer 2011 riots in parts of the area and in similar communities around London and the UK. The general deprivation of the area had a stark impact on people's health, illustrated by a shocking statistic: in 2005, an eight-stop journey east on the Jubilee line from Westminster represented a seven-year drop in average male life expectancy; in Westminster it was 77.7 years, in Canning Town it was 70.7 years.¹³

In 1858 the river Thames was little more than an open sewer. In response to the 'great stink' of that year, which caused the closure of the Houses of Parliament, an act was passed and Bazalgette was commissioned to design and implement a completely new sewer network for the metropolis. It was one of the great engineering wonders of the world comprising 1,800km (1,100 miles) of underground brick sewers, and a similar length of street sewers. Abbey Mills pumping station adjacent to the Park was one of four across London that were veritable palaces of elaborate, decorative ironwork. The whole system still functions today, and the Great Northern Outfall Sewer crosses the Park and its waterways. On top of Bazalgette's brick-lined Great Northern Outfall Sewer tunnel is the Greenway, a



This aggregate works on the river Lea close to the Park reflects much of the area's heavy industrial past that made a significant contribution to defining the environmental character and identity of the town and riverscape of east London.



Fly-tipping on a vacant site within the Park boundary prior to construction. At the start of the project many sites were blighted by the impact of high-voltage power lines and pylons along with significant levels of pollution, contamination and illegally dumped waste.



A light industrial building supplies site adjacent to the river Lea in 2003. Located south of the Park site, such land uses have typified the industrial and commercial activities in the Lower Lea Valley for many decades.



The infamous 'fridge mountain' within the Park site in 2003. Located adjacent to the Waterworks river, the site is now home to the Aquatics Centre.



The Manor Garden Allotments located in the middle of the Park site, photographed in May 2007. The idyllic site was established over 100 years ago, and its removal was one of the most difficult and controversial decisions London 2012 had to make. The ODA worked closely with the Manor Gardening Society on the design of the new allotments that will be relocated within the Park.

footpath and cyclepath connecting Victoria Park to Beckton and the Thames. Upgrading part of the Greenway was a key project for the Park. Bazalgette's system is a great example of multifunctional infrastructure that the Victorians were so good at – another is the Embankment, which provides a promenade and road adjacent to the Thames, an underground railway and a utilities corridor. The Park emulates this multifunctional focus on long-term legacy –with a 21st-century sustainability sensibility.

The Lower Lea Valley, within which the Park sits, was a cradle of the industrial revolution in London. The legacy of over 150 years of use and misuse was post-industrial dereliction, and inaccessible waterways. Power lines, under-used railway sidings, abandoned buildings and waterways characterised the area. The infamous 'fridge mountain' – thousands of

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THE BID AS CATALYST FOR REGENERATION

Alison Nimmo CBE

Director of Design and Regeneration, Olympic Delivery Authority,
2006–2011

For the bid, the then Mayor of London Ken Livingstone had a clear vision to use the London 2012 Olympic Games and Paralympic Games to achieve a radical transformation of east London and the Lower Lea Valley. There had been numerous plans and good ideas over many years, but none had come to fruition. We needed a big-scale masterplanning approach and the Games could provide the catalyst, generating the expertise, money and focus to compress more than 25 years of work into just seven, accelerating this transformation. There was strong support from the Prime Minister, Tony Blair, alongside Gordon Brown, the Chancellor of the Exchequer, who committed to financially underwrite the bid on behalf of the Treasury.

The bid was carefully and professionally orchestrated with an ambition that placed sustainability

and long-term legacy at its heart. Taking young local students to Singapore for the final round of voting and playing the next-generation card was a compelling illustration that contributed to winning the argument. We wanted to promote an image of hosting the 'Games in the Park'. While capitalising on London's and Britain's great tradition of urban parks, with the triathlon in Hyde Park and equestrian events in Greenwich Park, we never intended to follow a Victorian or Royal Park model for the main Olympic Park site. We wanted to reinvent a park for a modern context that would work on many different levels. Designed for 100 years, yet capable of accommodating around 250,000 visitors per day during the Games, it would be fun and intensive, but also a relaxing environment. The bid projected an image of a landscape that would be of a different



East London school children with the athlete Daley Thompson celebrating London's winning bid in Singapore on 6 July 2005.



Looking south over the Olympic Stadium 'island site' towards Canary Wharf in April 2007 just as demolition and clearance commenced. The Aquatics Centre on the left of the image was the first to start on site.



Construction of the new Three Mills Lock on the Prescott Channel in September 2008. It enabled around-the-clock access to the Park for construction barges.



Illustrative masterplan for the Games pre-bid planning application prepared by the EDAW Consortium in 2004.

muscular character – that was a strong concept from day one – and that would leave a new park as a gift to London after the Games.

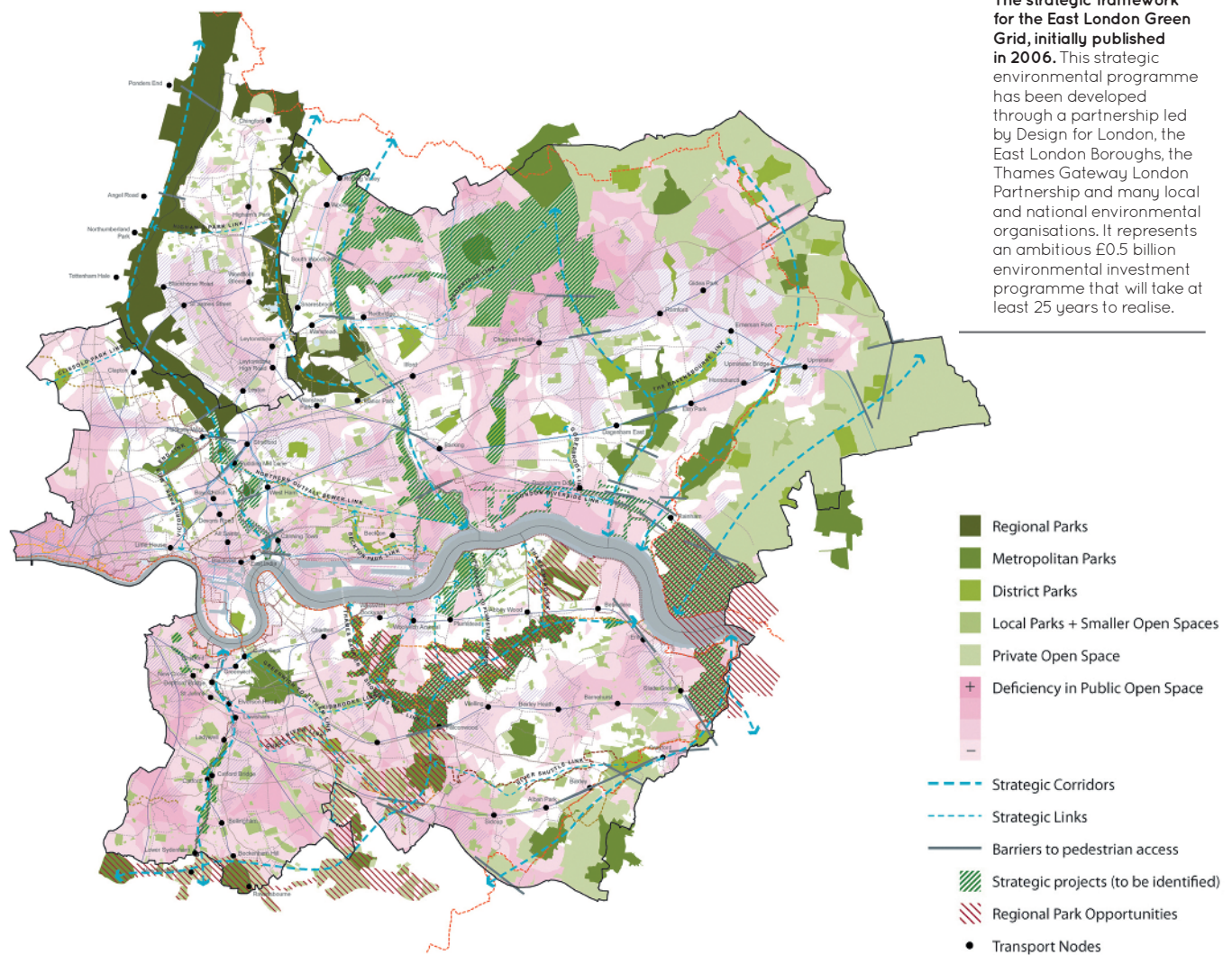
On joining the bid team in December 2003, my first job was to review the draft masterplan for the planning application ensuring the viability of the bid proposals. The London Development Agency (LDA) did a huge amount of work in the early years in pulling together the masterplans, assembling the site and undertaking the initial stages of remediation. Probably not enough credit has been given to that immense task. But the LDA was not the vehicle to deliver the regeneration and development programme for the Games and legacy. Most Games have been delivered in quite a formulaic way using the Organising Committees of the Olympic Games (OCOGs) which liaise directly

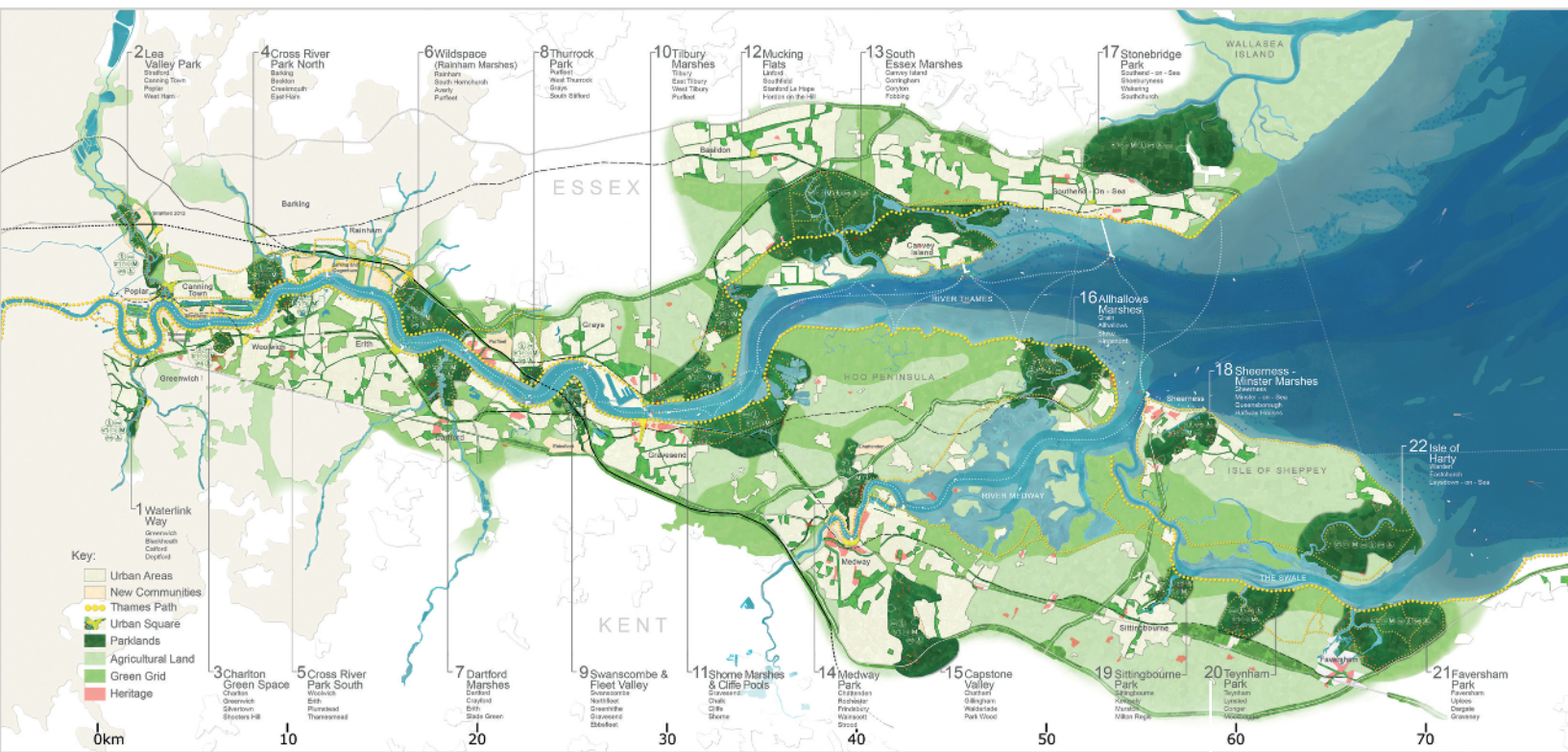
with the International Olympic Committee, and steer the operational phase at Games time. London needed a separate vehicle to build the venues and drive the complex regeneration of the site, and so the London Olympics Bill established the Olympic Delivery Authority (ODA) in April 2006 to lead this work. After the Games, the site and the legacy programme would then pass on to the Olympic Park Legacy Company (renamed the London Legacy Development Corporation). It is the first time that a legacy vehicle has been set up pre-Games. We have been able to maintain continuity between the organisations by seconding and transferring LDA and ODA staff and expertise across to the Legacy Company.

Whilst Sydney put the environment at the heart of their Games, we took a ‘total sustainability’ approach for London. It was not just a matter of what we built, but how we built it. The reuse of rainwater, the procurement of timber, the use of the railhead to bring 70 per cent of materials by weight onto the site, the whole social inclusion and access agenda, climate change, biodiversity, reinstating Prescott [Three Mills] Lock with British Waterways to turn the river from tidal to locked, improvements in public transport, and the investment in wider connectivity with new bridges and refurbished towpaths to encourage walking and cycling – the key has been the total approach.

The geography was complex with a mosaic of mixed uses, waterways and lost landscapes of allotments and cycle tracks. The site straddled four local authority boundaries and had become everyone’s backyard and dumping ground. So there was a lot of heavy lifting during the early stages of the programme, removing the blight of the power lines by placing them underground, clearing away the scrapyards and the infamous ‘fridge mountain’. Many people haven’t really got their head around the scale of the transformation. But the Games have provided the mechanism to mend, restore and reconnect the site, creating a new heart and a new piece of the city in east London.

discarded fridges piled high – was here. Noxious and invasive weeds had taken hold. There were only three roads connecting neighbourhoods either side of the valley, which was a tear in the fabric of east London. Despite the many unappealing features of this landscape, it was not without some charm and a sense of post-industrial melancholy. Also, the Manor Gardening Society allotments that lay in the middle of the future Park were idyllic. Accessed only by a narrow bridge across the river Lea, they were a wonderfully eclectic community haven in the middle of a chaotic landscape. A largely utilitarian and polluted land within sight and sound of the City of London, and in the shadow of the towers of Canary Wharf, where the average annual salary was £100,000¹⁴ compared to Stratford's £24,000.¹⁵ High worklessness, poor housing, lack of jobs, education, health and access to parks, but with availability of land, and a continuing national and metropolitan priority for regeneration: this is why east London, and Stratford in particular, was chosen as the location for the Park.





STRATEGIC PLANNING AND REGENERATION

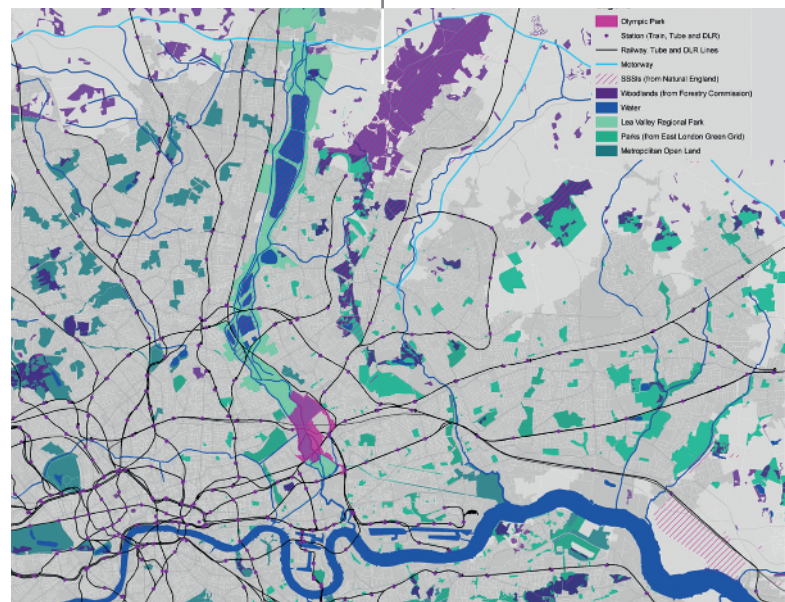
The planning, location, design and development of the Park cannot be fully appreciated without an understanding of the UK's and London's planning system. A whole host of mutually supportive development plans, policies and guidance notes cascade from the national to the local level.¹⁶ The Government's Sustainable Communities Plan provided the overarching context for the preparation of spatial plans by statutory planning authorities. Environmental impact assessments were required for all planning applications, and, alongside the design and quality of the built and natural environment, were assessed against a series of national Planning Policy Guidance notes and Planning Policy Statements addressing key issues such as Delivering Sustainable Development, Green Belts, Housing, Biodiversity, Geological Conservation and Development, Open Space, Sport & Recreation and Flood Risk.¹⁷ Additionally, a number of Government agencies had statutory responsibilities for environmental protection, particularly the Environment Agency with a remit that included waste and protecting the quality of air, land and water; English Nature (now Natural England) responsible for conservation of biodiversity; and English Heritage responsible for the historic environment. The initial planning application for the Park was approved in October 2004 to underpin the validity of the bid. To ensure that legacy was embedded in the planning process, two masterplans were prepared to support the bid: one for the Games, and one for legacy. The four Host Boroughs within which the Park was located approved these applications at a joint session at City Hall. This was followed by the Mayor's approval then the Government's ratification. The potentially

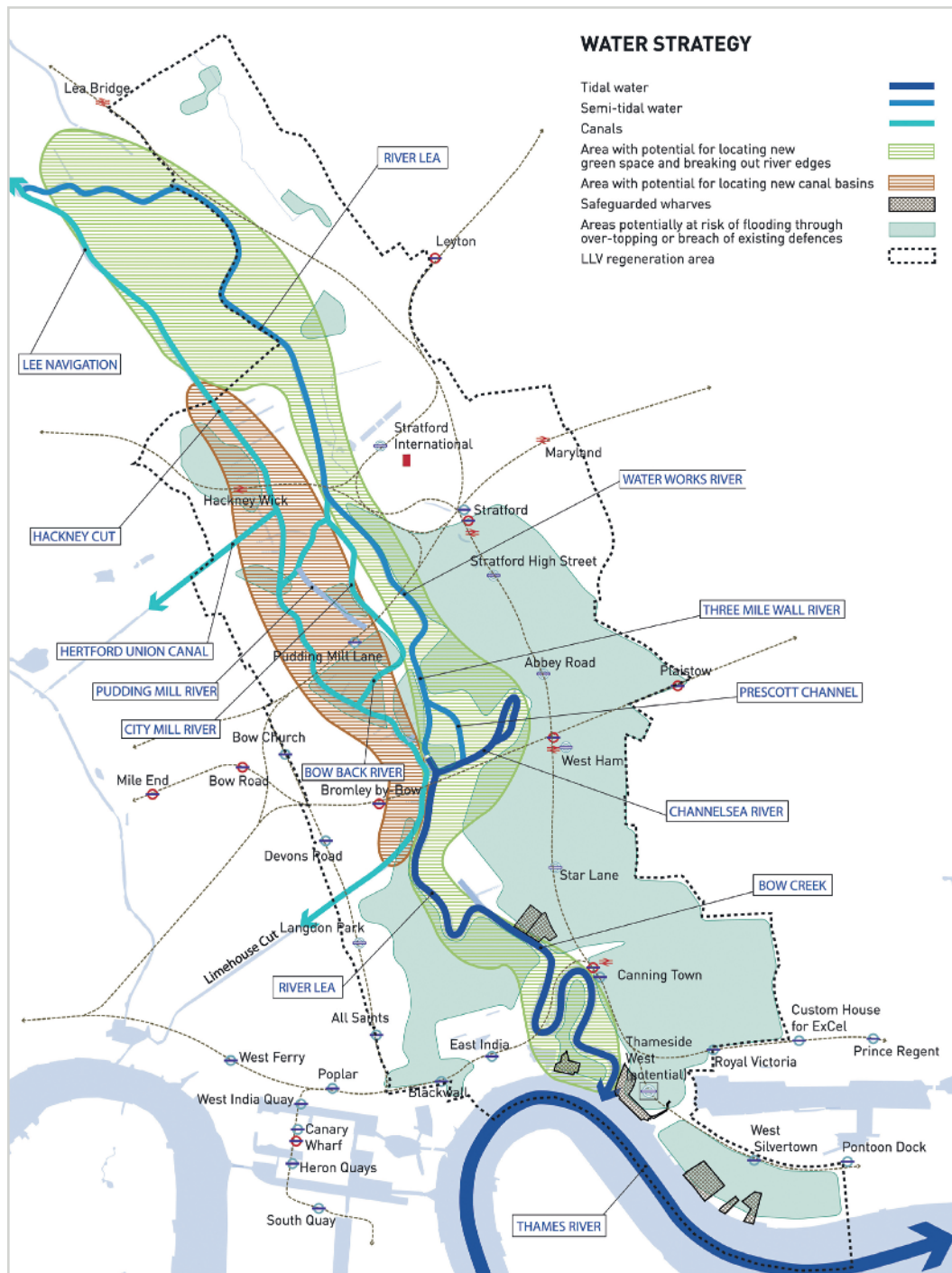
Terry Farrell and Partners' proposals for the Thames Gateway Parklands, published in 2006. Centered on the corridor of the Thames Estuary and including the Olympic Park on the western boundary, the Parklands provide an environmental investment framework to create a network of accessible, high-quality and fully functional landscapes to support the Gateway's rich cultural and biodiverse assets.

fissile approvals process was hard fought. Inevitably there were vested interests, patches to be defended, deals to be done, costs and benefits calculated, and risks and returns weighed by all participants.

Not only would the Park be one of Europe's largest construction projects, it would also sit within Europe's largest regeneration programme, the previously mentioned Thames Gateway.¹⁸ The M4 motorway corridor west of London is largely fully developed. Green Belt and commuter territories militate against large-scale development to the south and north. Consequently, successive governments have recognised the Gateway as the place for London to expand. With acres of post-industrial land available, and a reasonable level of transport and other infrastructure, it is primed for redevelopment over the long term. The last Government's intention was to deliver 160,000 homes and 225,000 jobs by 2016. The programme is a recognition of the importance of London and the south-east as a key driver of the UK's prosperity. Government also saw that the Park was a key development programme within the Gateway and wanted to ensure that the legacy benefits were exploited and maximised for the local and wider communities there. As noted above, environmental improvement in the Gateway is driven by a series of Green Grid plans that were consolidated in the vision for the Thames Gateway Parklands and aims 'to provide a network of accessible, high-quality and sustainable landscapes and waterways, which capitalise on existing natural, built, historic and cultural assets. It supports their conservation, enhancement and ongoing use. Parklands will boost Thames Gateway's rich biodiversity, strengthen its character and identity, and transform perceptions of the area into it being a great place to live, work and invest in. Parklands will be a key economic driver in the Gateway, encouraging investment and supporting regeneration.'¹⁹

The location of the Olympic Park at the southern end of the Lee Valley Regional Park that was first designated in 1967. The Regional Park stretches north for 42km (26 miles) into Hertfordshire and Essex. A key strategic role for the Olympic Park is to kick-start the extension and development of the Regional Park south to the river Thames.





The Water Strategy plan, published in the GLA's Lower Lea Valley Opportunity Area Planning Framework in 2007. The regeneration framework set out a vision for a 'Water City' at the heart of the regeneration including ecological enhancement and re-naturalisation of sections of the waterway system to encourage greater use for living, transportation and recreation.

The Park also sits within the Lee Valley Regional Park, first promoted by Sir Patrick Abercrombie in his Greater London Plan of 1944, which also consolidated London's green belt. Eventually created by Act of Parliament in 1967, the Regional Park is a 40,000-hectare, 42-kilometre (26-mile) long river corridor stretching from Ware in Hertfordshire down to the Thames. In 1963 the Civic Trust was invited to look into the potential for the Lee Valley Regional Park. Remarkably, its report included proposals for an open-plan 'Fun Palace'



The Green Space plan, published in the GLA's Lower Lea Valley Opportunity Area Planning Framework in 2007. The proposed green space network in the OAPF focused on the provision of at least 130ha of new public open spaces in areas of deficiency. The Olympic Park would begin the establishment of a multifunctional ecological corridor along the waterways linking the upper Lee Valley Regional Park to the Thames and the East London Green Grid.

where 'people of all ages and interests will find space to enjoy their leisure, to relax or be active, at any time, day or night'. The Park was located on the very site proposed for the 'Fun Palace' envisioned some 50 years earlier!²⁰ The Lee Valley Regional Park Authority owns one third of the Park and it will run and operate the legacy hockey and tennis centre at Eton Manor, the VeloPark, as well as the White Water Centre just to the north of the Park.

The regeneration of east London was a priority of the Mayor's spatial development framework for the metropolis adopted in 2004. The London Plan promoted staging the

Games as a ‘major catalyst for change and regeneration in east London, especially the Lea Valley, leveraging resources, spurring timely completion of already programmed infrastructure investment and leaving a legacy to be valued by future generations’. The Plan recognised that without the Games change would still happen but it would be ‘slower, more incremental and less ambitious from a sporting, cultural and environmental perspective’.²¹ In other words, the Games would fast-forward regeneration. The Plan set out an integrated social, economic and environmental framework for a 15–20-year period, spearheading London’s aim to become an exemplary sustainable world city. It was underpinned by a series of interrelated strategies published between 2001 and 2004 that addressed transport, economic development, biodiversity, air quality, municipal waste management, energy, ambient noise and culture. It noted that the plan for the Park would release the necessary development land for a successful sustainable Games, assure improvements to the open space and network of waterways in the Park and surrounding areas, and require that special attention be paid to long-term flood risk and improving public access for local communities to Lee Valley Regional Park. The East London Green Grid was and remains a unifying green infrastructure framework, a network of interlinked and high-quality open and green spaces, guiding strategic environmental investment intended ‘to promote healthy living and community spirit through access to recreational and cultural opportunities, while at the same time promoting biodiversity and acting as a “green lung” for east London’. As part of the wider Thames Gateway Parklands vision, it will result in a connected ecological infrastructure for east London and the estuary.

The final piece in this complicated jigsaw puzzle of planning and environmental policies underpinning the masterplanning and design of the Park was the Lower Lea Valley Opportunity Area Planning Framework (OAPF). It was the key supporting document setting the planning framework for the Park that was developed in parallel with the bid. The decision to bid for the Games focused attention on what could be achieved in the Lower Lea Valley and addressed the capacity of the area for change, identifying the optimum scale of development and confirming the location of the Park. The OAPF took national and London Plan policies as a starting point, and concluded that there was capacity for 50,000 new jobs in the Lower Lea Valley, between 30,000 and 40,000 new homes (at least 44 per cent family housing), 10,000 of which would be in the Park. The overall vision was to create ‘a vibrant, high-quality and sustainable mixed-use city district, that is fully integrated into the urban fabric of London and is set within an unrivalled landscape that contains new high-quality parkland and a unique network of waterways’.²²

TOWARDS ONE PLANET LIVING

There is no doubt that the UK and London’s unique planning system provided an unrivalled and comprehensive foundation for the planning, location, design, development and legacy of the Park for the bid. Winning the Games would indeed ‘kick-start’ the regeneration

of an area of London that needed it, and had been planned and acted on for decades. However, the bid needed a sharper focus and credibility on sustainability. The legislative framework for delivering sustainable developments, and the setting and monitoring of targets, have developed at an ever-increasing rate. Despite the publication of *The Limits to Growth* in 1972,²³ the Brundtland Commission report *Our Common Future* in 1987,²⁴ and the 1992 Earth Summit in Rio de Janeiro, Brazil, many remain increasingly alarmed at the continuing, exponential depletion of finite natural capital resources, and the consequent degradation and pollution of the environment. Rio+20 did little to alleviate that alarm.

One Planet Living elegantly and simply states the obvious: we have to live within the capacity of one planet. It is an initiative developed by the WWF and BioRegional.²⁵ It recognises that present levels of consumption and waste production in the developed world are outstripping the productive and absorptive capacity of the planet. Europeans use three planets' worth of resources, North Americans use five planets' worth to sustain their lifestyles. One Planet Living promotes the development of sustainable communities that provide a high quality of life but use only their fair share of the Earth's resources. It

Zero carbon		making buildings more energy efficient and delivering all energy with renewable technologies
Zero waste		reducing waste, reusing where possible, and ultimately sending zero waste to landfill
Sustainable transport		encouraging low-carbon modes of transport to reduce emissions, reducing the need to travel
Sustainable materials		using sustainable and healthy products, such as those with low embodied energy, sourced locally, made from renewable or waste resources
Local and sustainable food		choosing low-impact, local, seasonal and organic diets and reducing food waste
Sustainable water		using water more efficiently in buildings and in the products we buy, tackling local flooding and water-course pollution
Land use and wildlife		protecting and restoring existing biodiversity and natural habitats through appropriate land use and integration into the built environment
Culture and community		reviving local identity and wisdom; supporting and participating in the arts
Equity and local economy		creating bioregional economies that support fair employment, inclusive communities and international fair trade
Health and happiness		encouraging active, sociable, meaningful lives to promote good health and well-being

The One Planet Living Action Plan developed by WWF and BioRegional.

This provides a practical framework for individuals, businesses and government organisations to operate, work and live within a fair share of the Earth's resources. It focuses on 10 integrated environmental, social and economic elements that underpin sustainable living.

Theme	Proposed actions	Benefits
Low-carbon Games		
Transport and air quality	100% public transport for spectators Promotion and maximum use of Channel Tunnel Rail Link to reduce air travel Low-emission zone for Olympic Park and Olympic fleet of low/no-emission vehicles Active spectator programme for walking and cycling Carbon-offset programme for all Olympic travel	Significant reduction of CO ₂ emissions Improvement to air quality Powerful link to health agenda Innovative, comprehensive and durable low-carbon strategy – benchmark for future Olympic Games
Resources	Olympic Park powered by mix of tri-generation (combined cooling, heat and power), locally generated and off-site renewable energy Sustainable water management	An exemplar model for sustainable cities tackling the core issues of integrated resource management, and reducing CO ₂ emissions
Sustainable construction	Build to highest sustainable construction standards consistent with the principles of One Planet Living	High-quality built environment – reduced CO ₂ , proofed against climate change and respecting local heritage
Zero-waste Games		
Waste management	Closed-loop system for zero-waste Games	Diverting waste from landfill Boost to recycling market
Procurement	Sustainable procurement policy applied to materials, services, food and merchandise	Healthy products and materials Resource efficient, reducing waste at source
Conserving biodiversity		
Enhancing urban green space	Integrated restoration strategy for Lower Lea Valley Creation of large new urban park Olympic Biodiversity Action Plan	Major gain in quality green space Valuing biodiversity as an integral component of the built environment Bringing nature and people closer together
Promoting environmental awareness and partnerships		
Community engagement	Community-based Sustainable Sport Programme Annual 'clean-up' projects	Raised public awareness and participation in environmental and community initiatives Legacy for future events
International	Exchange programmes, scholarships, technology transfers and capacity-building projects for developing countries	Building global sustainability networks through sport

The environmental key-point action plan system included in London's bid document prepared in 2004. This set out a suite of sustainable development actions and benefits including those for conserving biodiversity, preparing an Olympic Biodiversity Action Plan and enhancing urban green space.

acknowledges the diversity and fragility of the planet and the importance of the global community in defining a common future for all current and future generations. The 10 One Planet themes cut across the entire agenda of sustainability, providing a holistic model that ensures every aspect, not just the environmental objectives for resource efficiency, is considered. It also addresses the 'softer' community objectives for local and sustainable food, culture and heritage, equity and the local economy, and health and happiness. One Planet Living complemented the second of the Olympic Movement's Fundamental Principles, which is 'to place sport at the service of the harmonious development of humankind'.²⁶ It also supported the aspirations of the IOC's Sport for Sustainable Development and the Olympic Games Global Impact initiative, which provides an objective analysis of the impact of each Games.

Towards a One Planet 2012, published with the bid in 2005, set out the aspirations.²⁷ Objectives and priorities that were particularly important to the Park included commitments to a low-carbon Games that would showcase responses to the impacts of a changing climate. Minimising waste and maximising reuse and recycling eventually drove some remarkable progress, particularly in the construction of the Park.

(continued on page 50)



MASTERPLANNING THE ECOLOGICAL SUPERSTRUCTURE

Jason Prior

Chief Executive of Planning, Design and Development, AECOM

Bill Hanway

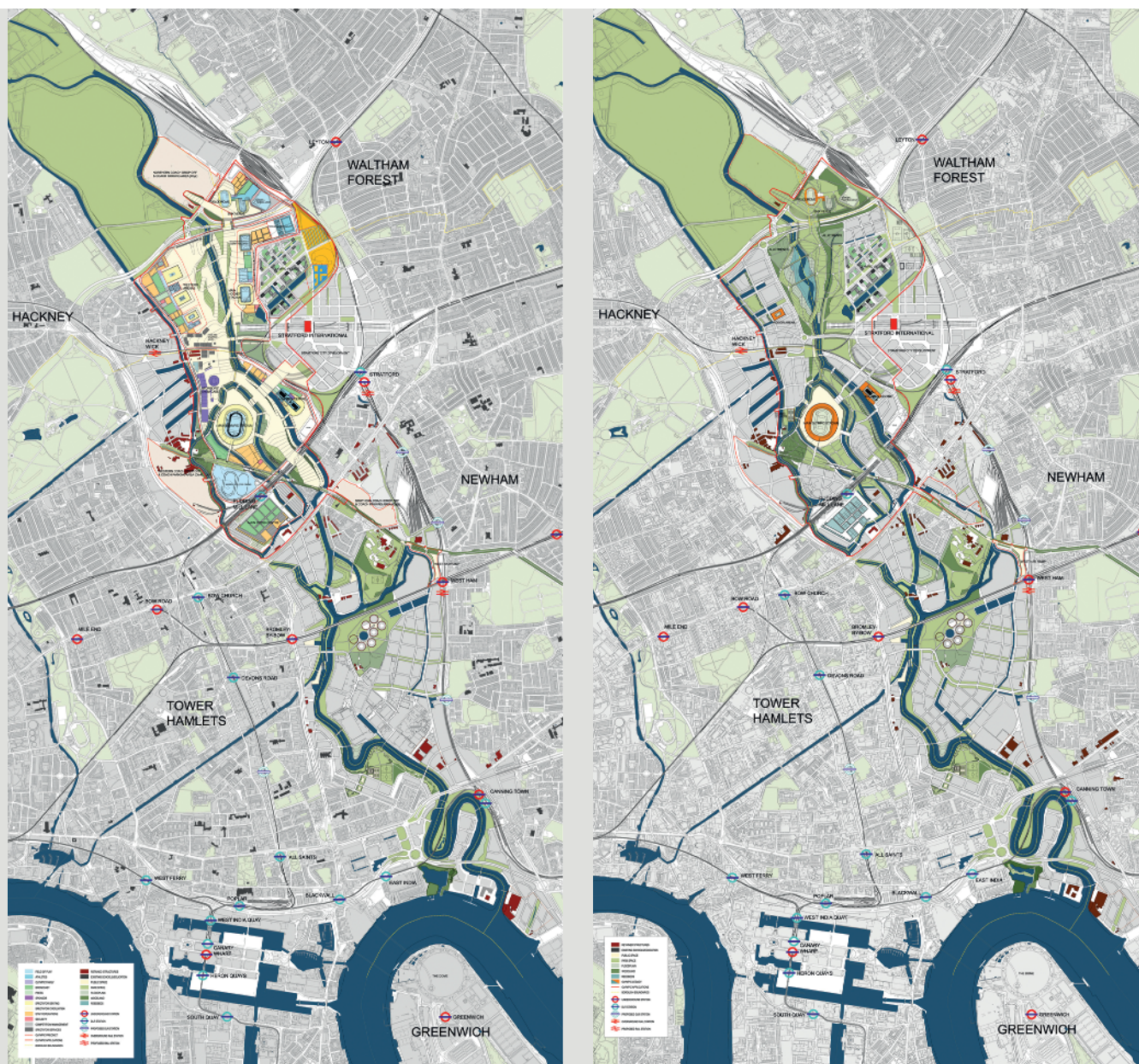
Executive Director of Operations, Europe, AECOM

Our very first steps en route to the Games began in August 2003 when we were asked to prepare a regeneration framework for the Lower Lea Valley. Looking at the area from Hackney Marshes south to the Thames, we focused on the environmental and ecological integrity of the corridor and early in the process the idea for a park began to crystallise. This took in the wider social, environmental and economic objectives that would become the Opportunity Area Planning Framework (OAPF). As momentum built around proposals for a bid, the discussions became increasingly intense. We could see that while the strategic regeneration objectives could be delivered without the Games, the catalyst provided by the Games would accelerate the process and provide a focus for the area. The Mayor of London, Ken Livingstone, saw this as the key way to attract investment from central government.

Many thought that London was not a strong contender to host the Games and at that stage was at least 18 months behind Paris in its preparations. The reputation of our protracted planning system did little to build confidence that London was a realistic option. Following an extensive planning process, the failure to fund a venue for the World Athletics Championships

at Pickett's Lock, just to the north of the site, only compounded the perception that London couldn't deliver on time. So we were working to an extremely tight deadline to produce a credible bid that would also satisfy considerable planning requirements. In addition, the sequencing of applications which is unique to English planning law meant that the OAPF had to be developed and adopted in parallel to the Games plans. This was because it was not possible to secure planning permission for the Games without a planning framework to work within. Furthermore, to complete the land assembly, a Compulsory Purchase Order (CPO) could not be submitted without establishing the long-term regeneration objectives for the valley. So this was a regeneration framework that featured the Games as a major investment opportunity on the way to securing the economically, socially and environmentally sustainable long-term future for the Lower Lea Valley.

The goal of this legacy became a practical and political tool to deliver the regeneration needs of east London. While housing, employment and transport demands were great, it was the idea of the Park and new public open space in the area that attracted the greatest political support from the local communities,

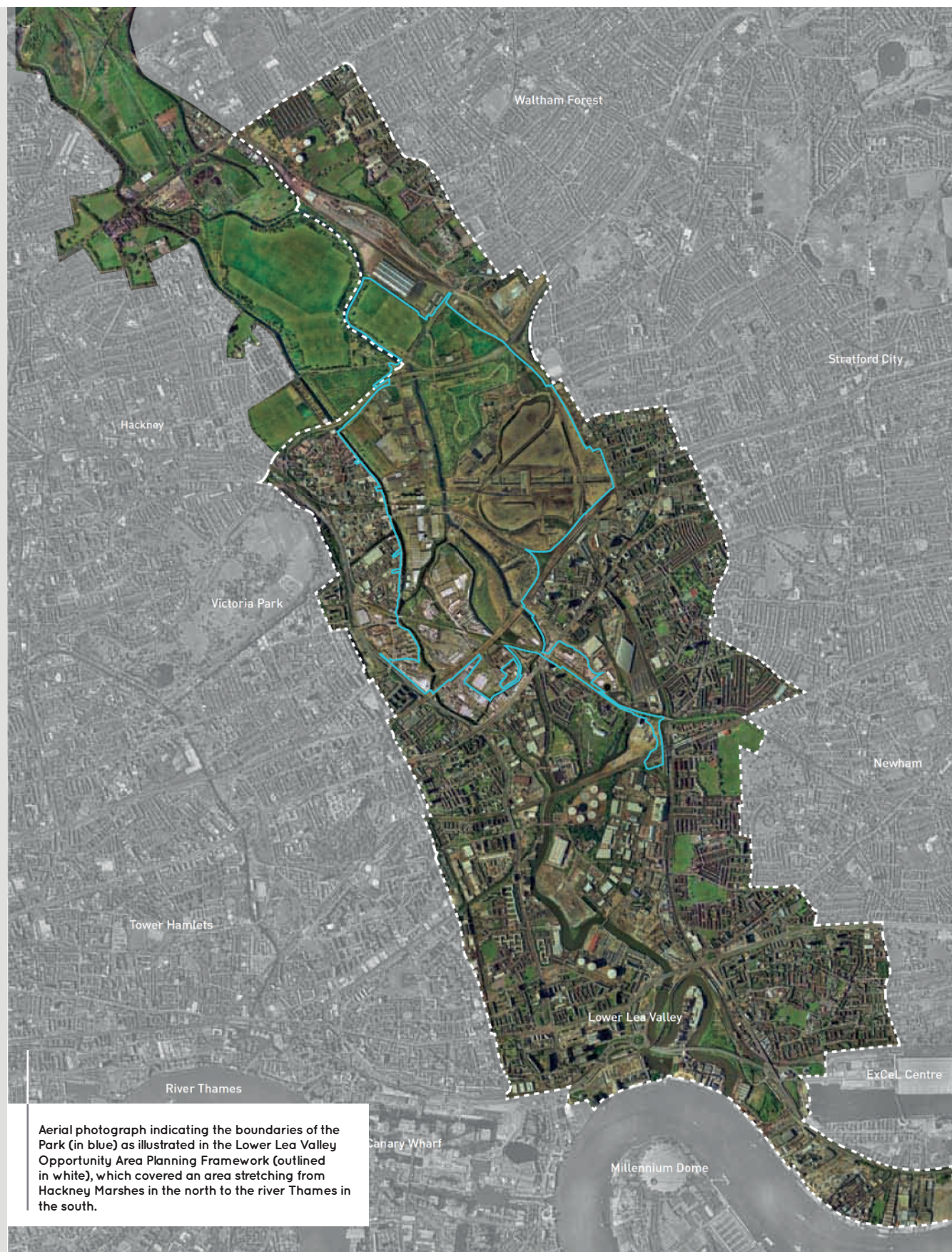


The first masterplans for the pre-bid planning application set within the Lower Lea Valley Opportunity Area Planning Framework prepared by EDAW in 2004. The plan for the Games is on the left and that for legacy is on the right.

mayors and leaders. The Games, and the key element of the Park, then became the structure around which we were able to discuss other issues of social need. Winning the bid meant that delivering the Park and its attendant benefits would be achieved with the greatest possible speed. From those early days, whenever we produced a plan for the Park as it would look during the Games, we also showed how it would look in

legacy. The concept of the Games with an integrated legacy plan was at the heart of London's bid and it is significant that the IOC now uses legacy as a key criterion for a winning city.

Having won the bid, much to the surprise of many people, the challenge rapidly turned to designing the masterplan to respond to the requirements of the Games. Through our work on the OAPF we



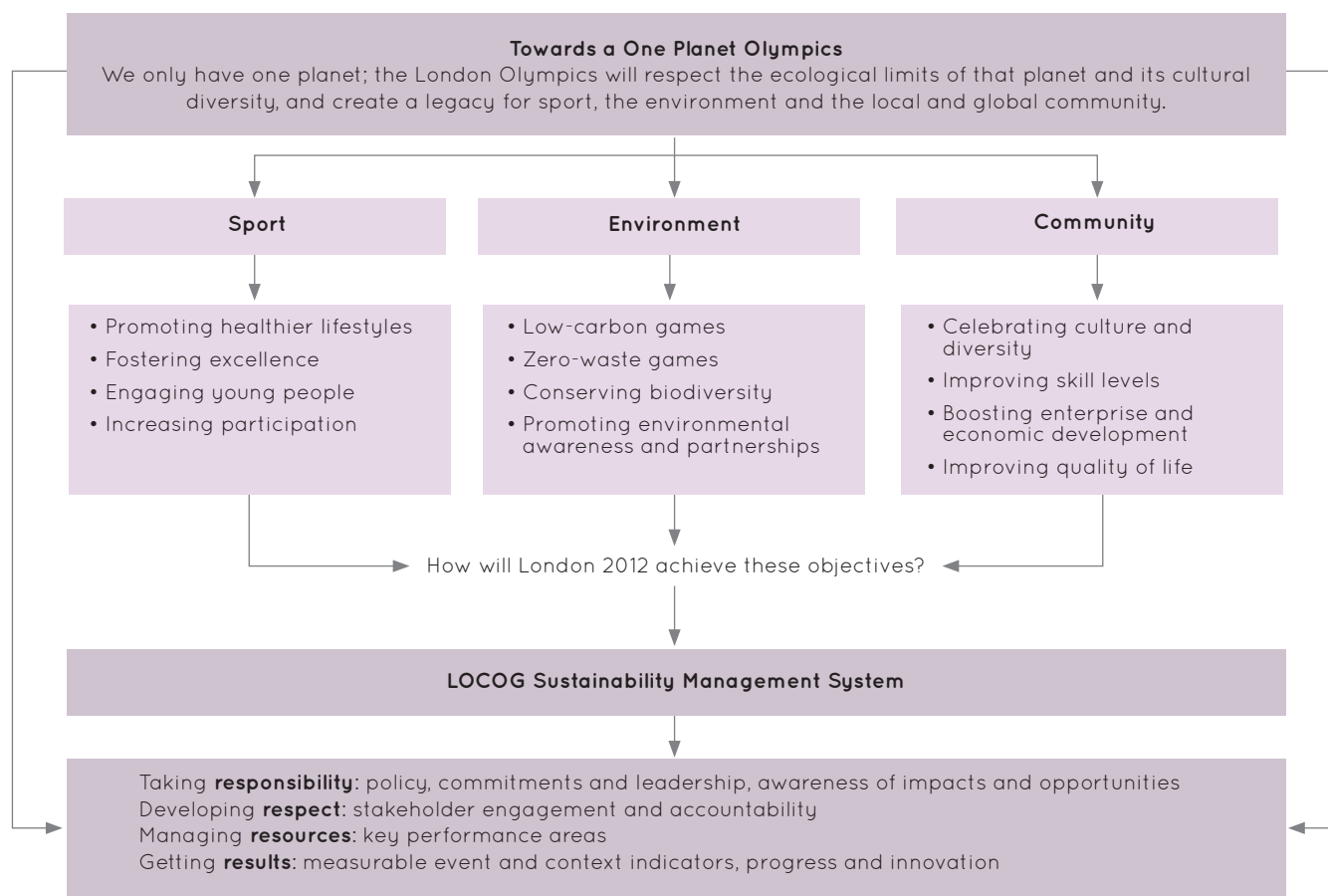
had a thorough understanding of the Park site, its opportunities and its challenges. During our research we had built up multiple layers of social, economic and environmental geographic information system (GIS) data and evaluations for the site. This included road and rail capacities, wider transport requirements alongside natural and man-made waterways, historic artefacts and key built assets. It was important to understand the constraints of the site, the power lines, rail lines and sewers, while developing a strong design response that struck a balance between exposing the inherent beauty of the site and retaining its key urban qualities.

Although the site was extremely complex, at a strategic level we got to the answer very quickly. We realised that a robust approach was required to create the development platforms for the venues and other elements needed for the Games, to rejuvenate the waterways and land and to integrate the site with its surrounding communities and the rest of London. We swiftly developed the armature, or framework, and then spent time refining the masterplan and exploring the many and varied options. By overlaying the natural and man-made constraints of the rail and waterways, these started to define the south area of the Park. Locations for the Olympic Stadium and Aquatics Centre were quickly fixed. The Olympic Stadium needed to be set some distance from the transport hubs to help facilitate the management of crowd movement and volumes, while the Aquatics Centre needed to have direct and easy access to transportation and local communities to maximise the ease of regular use in the future.

Meanwhile, the north area of the Park was more open in character, providing more flexibility in its planning and use. We placed the Velodrome in the north-east corner of the site because we knew that,

with Britain's enthusiastic cycling community and strength in cycling events, this was likely to be a big powerful building, an architectural icon, anchoring the north end of the Park. The locations of smaller venues, temporary and permanent, were kept fairly flexible, but the most powerful fix from day one was the Park itself. The Park became a totally dependable asset. All the boroughs supported the idea of a new Park and it was especially well defended when it came to the CPO enquiry.

The power of the sustainability objectives were there at the outset. The earliest images were of a strong flowing landscape and ground plane interwoven with venues and buildings, and it was clear to us that this project would become a model for sustainability in regeneration projects. To have sustainability embedded in all aspects of the project, you have to always be mindful of the need to incorporate all factors into the planning conditions. We took every opportunity to try to ensure the sustainability outcomes were written into the planning agreements. You also have to push hard to incorporate it into the briefs – which was a challenge with the Aquatics Centre because the design was commissioned before the detailed sustainability targets were set. The need for fixed targets for sustainability was as important as the need to retain flexibility for the legacy of the site. Finding this balance was essential so that the density of the future urban development could not be set too high or too low to allow different responses to the demands of a fluctuating market. The ultimate urban structure had to be driven by an exacting and high-quality street pattern and public realm. The Park, with its integration of landscape, ecology and riverscape, was always the central ecological superstructure for the entire project.



Conserving biodiversity, enhancing green spaces and bringing nature closer to people, similarly encouraged progress. Creating the Park as a new piece of city in east London offered a high-profile opportunity to demonstrate how sustainable developments could be delivered within an urban context. The elegance and simplicity of the One Planet Living message, supported by the credibility of WWF and BioRegional, made it an effective model that drove sustainability, not only in the bid, but also throughout the whole of the Games and the Park.

The environmental management system included in London's bid document prepared in 2004. This established a set of sustainable development goals described as *Towards a One Planet 2012* that took an integrated approach to sustainable consumption, production and use of natural resources, including the management of water, energy, materials and waste.

THE LONDON 2012 BID

With the principle of the Park established, its location in east London agreed, the planning and design framework already in place, and One Planet Living themes underpinning the drivers of the sustainability agenda, London's Candidate File for the 30th Olympiad was finalised and submitted in November 2004. The bid document formed the basis of the Host City Contract that was underwritten by the British Government following the award of the Games in 2005.²⁸ Its 550 pages set out how the Games would be delivered, the location of the venues, legacy, political and economic structure, environment, finances, transport and security. It promised to deliver 'the experience of a lifetime for athletes', leaving 'a legacy for sport in Britain' and supporting 'the IOC and the Olympic Movement'.

But more important for the Park was the commitment to benefit ‘the community through regeneration’. In addition to the sporting legacy of the Games, investment in a new permanent, sustainable infrastructure would leave the lasting social, economic and environmental legacy east London so badly needed. The Games and legacy masterplans set out how the utilities and infrastructure for the Park would be sized to serve the Games and a legacy community of around 10,000 homes with minimal conversion. Where required, the permanent venues would have additional temporary seating for the Games. Bridges and concourses that had to accommodate up to 250,000 spectators during the Games would have substantial additional temporary sections that would be removed following the Games – for example, a 40-metre-wide bridge required for the Games would be reduced to 4m for a permanent legacy footpath and cycle-path connection.

Business plans determined which venues would be viable in legacy, ensuring that only those that had a reasonable chance of a workable future were built as permanent structures. All others would be temporary. At the time of the bid, there was no need for a major new stadium in London. Wembley Stadium had only recently been completed and there was no interest from Premiership football clubs who could fill such a large stadium regularly. Additionally, the bid committed London to retaining athletics track and field facilities within the stadium. Athletics could only sustain crowds of up to 25,000 periodically. Consequently, and for the first time, it was proposed that the Olympic Stadium would be converted from an 80,000 capacity for the Games to a 25,000-capacity multi-purpose venue with athletics at its core. It was to become a ‘house of sport with training facilities, offices and sports science and sports medicine facilities’.²⁹

Before the Games, London did not have an Olympic-sized swimming pool; the proposed Aquatics Centre would have two 50m pools, a 25m diving pool, and a fitness centre to accommodate elite, local club and community users. It would accommodate 17,500 spectators during the Games, which would be reduced to a permanent capacity of 3,500 for legacy. The proposed Velodrome would be at the heart of the best urban VeloPark anywhere in the world. It would have a 6,000 capacity for the Games and in legacy, a one-mile road track replacing the original track previously located on the site, competition and recreational BMX tracks, and a mountain-biking course for use by all levels of bikers. After the Games, Eton Manor would become a sporting hub for the local community with facilities for hockey and tennis and 5-a-side football. A multi-use indoor sports centre with flexible seating for 6,500 spectators was proposed, which would host Handball, Goalball and the fencing element of the Modern Pentathlon during the Games, and in legacy be converted into a training and competition venue for a range of indoor sports and other cultural events. Other temporary venues would include the Water Polo Arena and Basketball Arena. This innovative approach of assuring the use of permanent venues and infrastructure in legacy, and embracing the temporary on such a scale, had never been adopted at a Games before.

Parc olympique Olympic Park

- A Stade olympique**
Olympic Stadium
Athlétisme/Athletics
- B Arènes sportives**
Sports Arenas
Basketball/Basketball
Escrime/Fencing
Handball/Handball
Pentathlon moderne
(Tir/Escrime)
Modern Pentathlon
(Shooting/Fencing)
Volleyball/Volleyball
- C Vélodrome/Velodrome**
Cyclisme (BMX)/Cycling (BMX)
Cyclisme (Piste)/Cycling (Track)
- D Centre de hockey**
Hockey Centre
Hockey/Hockey
- E Centre aquatique**
Aquatics Centre
Natation/Swimming
Natation synchronisée
Synchronised Swimming
Pentathlon moderne (Natation)
Modern Pentathlon (Swimming)
Plongeon/Diving
Water-polo/Water Polo

Zone de la Tamise River Zone

- F Le Dôme/The Dome**
Basketball/Basketball
Gymnastique (artistique)
Gymnastics (Artistic)
Gymnastique (Trampoline)
Gymnastics (Trampoline)
- G ExCeL**
Boxe/Boxing
Haltérophilie/Weightlifting
Judo/Judo
Lutte/Wrestling
Taekwondo/Taekwondo
Tennis de table/Table Tennis
- H UEL Docklands**
Water-polo/Water Polo
- I The Royal Artillery Barracks**
Tir/Shooting
- J Arène de Greenwich**
Greenwich Arena
Badminton/Badminton
Gymnastique (rythmique)
Gymnastics (Rhythmic)
- K Greenwich Park**
Pentathlon moderne
(Équitation/Course à pied)
Modern Pentathlon
(Riding/Running)
Sports équestres/Equestrian

Zone centrale Central Zone

- L Lord's Cricket Ground**
Tir à l'arc/Archery
 - M Regent's Park**
Baseball/Baseball
Cyclisme (Route)/Cycling (Road)
Softball/Softball
 - N Horse Guards Parade**
Volleyball de plage/Beach Volleyball
 - O Hyde Park**
Triathlon/Triathlon
 - P Wembley**
Football/Football
 - Q Wimbledon**
Tennis/Tennis
- Autres sites**
Other venues
- R Broxbourne Canoe**
Slalom Course
Canoe-kayak (Slalom)
Canoe/Kayak (Slalom)
 - S Weald Country Park**
Cyclisme (VTT)/Cycling (Mountain Bike)
 - T Eton Dorney**
Aviron/Rowing
Canoe-kayak (Eaux calmes)
Canoe/Kayak (Flatwater)
 - U Weymouth and Portland**
Voile/Sailing
 - V Hampden Park/St James's Park/
Villa Park/Old Trafford/
Millennium Stadium**
Football/Football

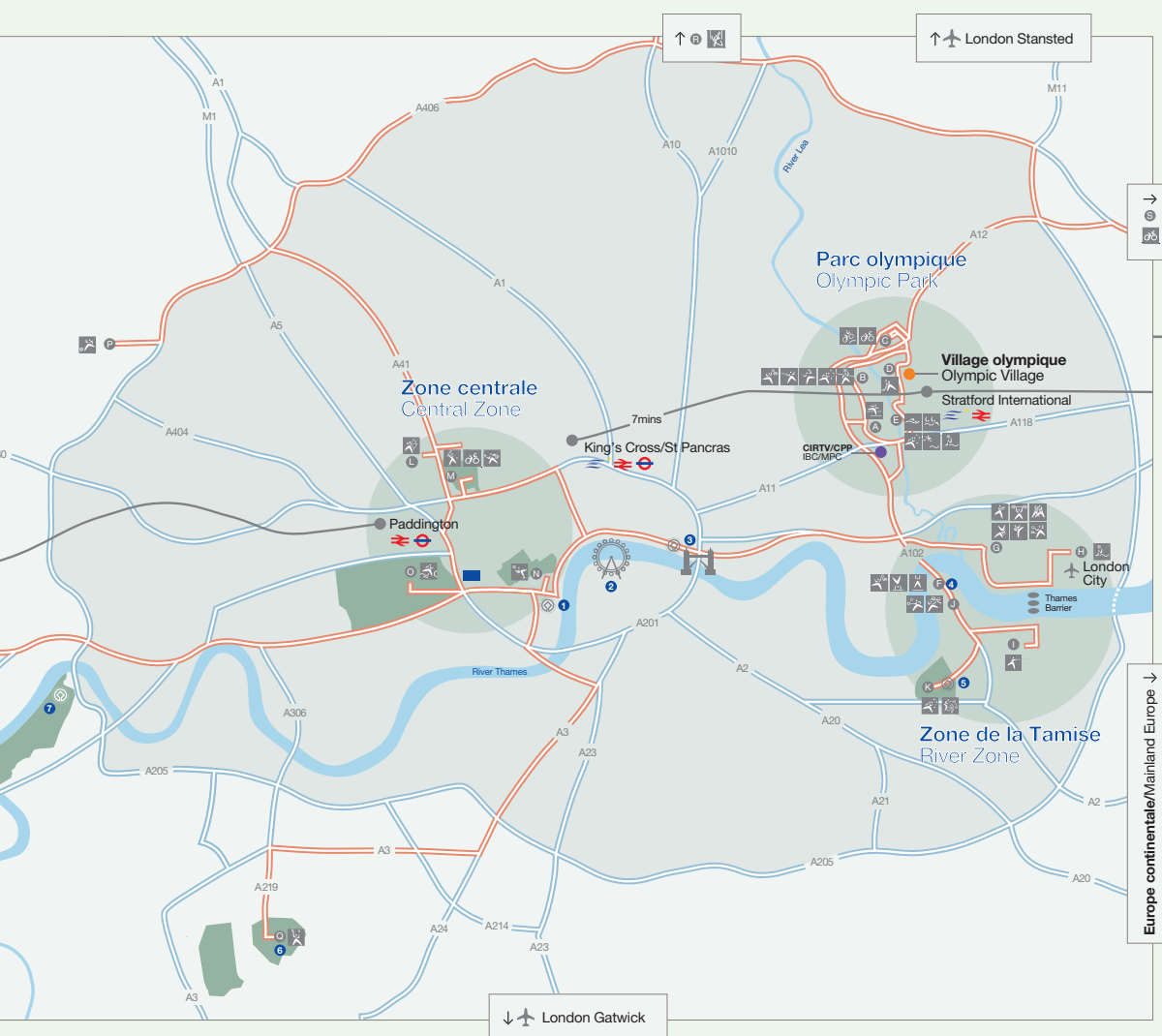
Légende/Key

- Stations de métro et gares ferroviaires
Tube and train stations
- ➔ Gare ferroviaire/National Rail
- ⊕ Station de métro
Underground station
- ✈ Eurostar
- Routes nationales/Main roads
- Itinéraire olympique principal
Olympic main route
- Lignes de trains principales
Main rail lines
- Ⓜ Sites de compétition
Competition venues
- Hébergement CIO
IOC accommodation
- Ⓜ Sites de compétition par sport
Competition venues by sport
- Lieux touristiques :
Places of interest:
- 1 Palais de Westminster
Palace of Westminster
- 2 British Airways London Eye
- 3 Tower Bridge



Importantly, the Olympic and Paralympic Village would become a new, sustainable residential community with 3,600 new homes – including a mix of affordable tenures and housing for sale and rent – along with a new school, community health centre, shops and open spaces.³⁰ The apartments would be energy efficient, light and airy. The blocks would be set on tree-lined streets, with footpaths and cycle paths connecting them to public transport, shops, the school and surrounding neighbourhoods. It would have its own open-space network culminating in a beautiful wetland landscape that collected and cleansed water from the site, and cascaded down to the core, river parklands in the north of the Park.

For the first time, the masterplans for an Olympic Park integrated planning and design strategies for land use, transport, waterways, landscape, ecology and socio-economic conditions for all temporary and permanent infrastructure for the Games and legacy. The masterplans set out a vision for revitalising the river ecosystem, increasing



The original Concept Map included in London's bilingual bid document prepared in 2004. This located all the venues for the 2012 Games within London and across the country. The strategy capitalised on some of the city's greatest assets including iconic and historic landmarks that would create memorable televisual experiences.

biodiversity and enhancing the quality of urban green space. With sustainability in mind, a high degree of self-sufficiency in energy, water supply and waste would be built in from day one. Detailed environmental surveys for ecology, hydrology, water quality, air quality, noise, contaminated land, built heritage and archaeology had already been undertaken. These would form the baseline for detailed planning, soil remediation, development, monitoring and environmental management of the new Park and its environs. Noxious and invasive alien plants including Japanese knotweed, Himalayan balsam and giant hogweed would all be eradicated within the Park. A Biodiversity Action Plan Framework was prepared in partnership with local communities, statutory and other environmental organisations and accompanied the 2004 planning application. It set out a strategy for increasing and enhancing target species and habitats, and committed to prepare a more detailed Biodiversity Action Plan that would formally drive implementation across the Park. The rivers and waterways would be restored along with

8.3 Plan des zones de sites et infrastructure de transport

Venue and transport infrastructure zone maps

Parc olympique

Olympic Park

A Stade olympique

Olympic Stadium

Athlétisme/Athletics

B Arènes sportives

Sports Arenas

Basketball/Basketball

Escrime/Fencing

Handball/Handball

Pentathlon moderne

(Tir/Escrime)

Modern Pentathlon

(Shooting/Fencing)

Volleyball/Volleyball

C Vélodrome/Velodrome

Cyclisme (BMX)/Cycling (BMX)

Cyclisme (Piste)/Cycling (Track)

D Centre de hockey

Hockey Centre

Hockey/Hockey

E Centre aquatique

Aquatics Centre

Natation/Swimming

Natation synchronisée

Synchronised Swimming

Pentathlon moderne (Natation)

Modern Pentathlon (Swimming)

Plongeon/Diving

Water-polo/Water Polo

Légende/Key

Métro et trains/Tube and Trains:

|| Lignes de métro et de trains existantes/Existing tube and train lines

|| Améliorations prévues aux lignes de métro et de train
Planned improvements to tube and train lines

— Service de navette supplémentaire Olympic Javelin/Additional Olympic Javelin Service

23 Principaux échangeurs ferroviaires et de métro existants/Existing tube and train major interchanges

41 Améliorations prévues sur les principaux échangeurs ferroviaires et de métro/Planned improvements to tube and train major interchanges

● Stations de métro et gares de trains existantes/Existing tube and train stations

● Améliorations prévues sur les stations de métro et les gares de trains/Planned improvements to tube and train stations

— 6 N°s de lignes de métro et de train.
Voir table 14.1/Tube and train line numbers refer to table 14.1

Roads/Roads:

— Routes principales/Main roads

— Itinéraire olympique principal
Olympic main route

— Voie circulaire du parc olympique
Olympic Park loop road

--- Promenade
Footpath

..... Piste cyclable
Cycle path

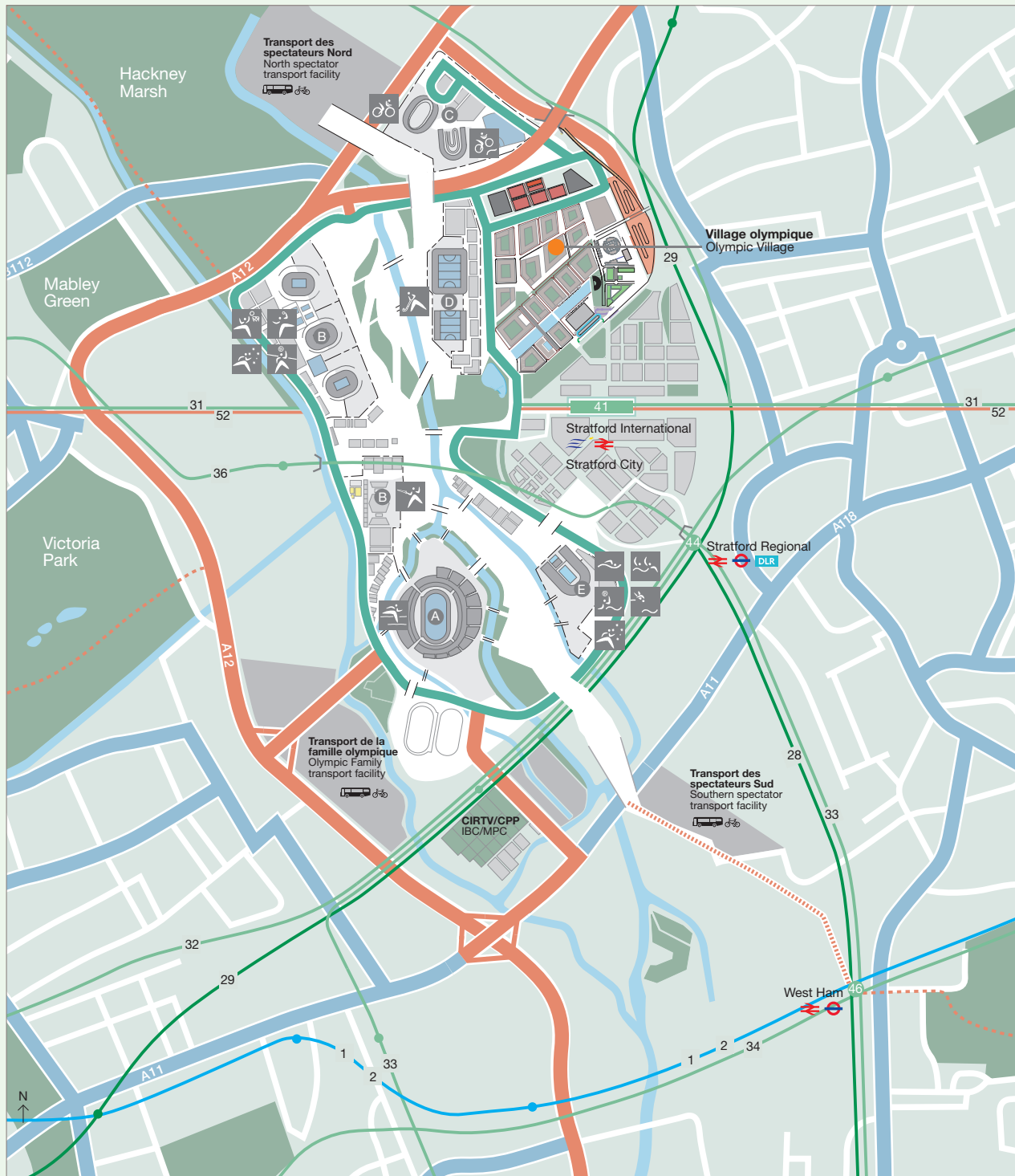
Sites de compétition et hébergement/Competition venues and accommodation:

K Sites de compétition
Competition venues

de Sites de compétition par disciplines
Competition venues by sport

■ Hébergement CIO
IOC accommodation

Parc olympique Olympic Park



The initial framework for the Park included in London's bilingual bid document prepared in 2004. Proposals for a compact Park concentrated infrastructure, parklands, venues and the Olympic and Paralympic Village in one location. As importantly, 75 per cent of this investment would be in permanent infrastructure to accelerate development in line with the already established, wider regeneration objectives for east London.

a wetland bowl and a sustainable urban drainage system. Vegetation on roofs and walls, and a large number of wildlife installations from bird and bat boxes, would all be designed to encourage biodiversity. But the Park would not just be for plants and wildlife – it would also be a safe, inclusive and accessible place for people.

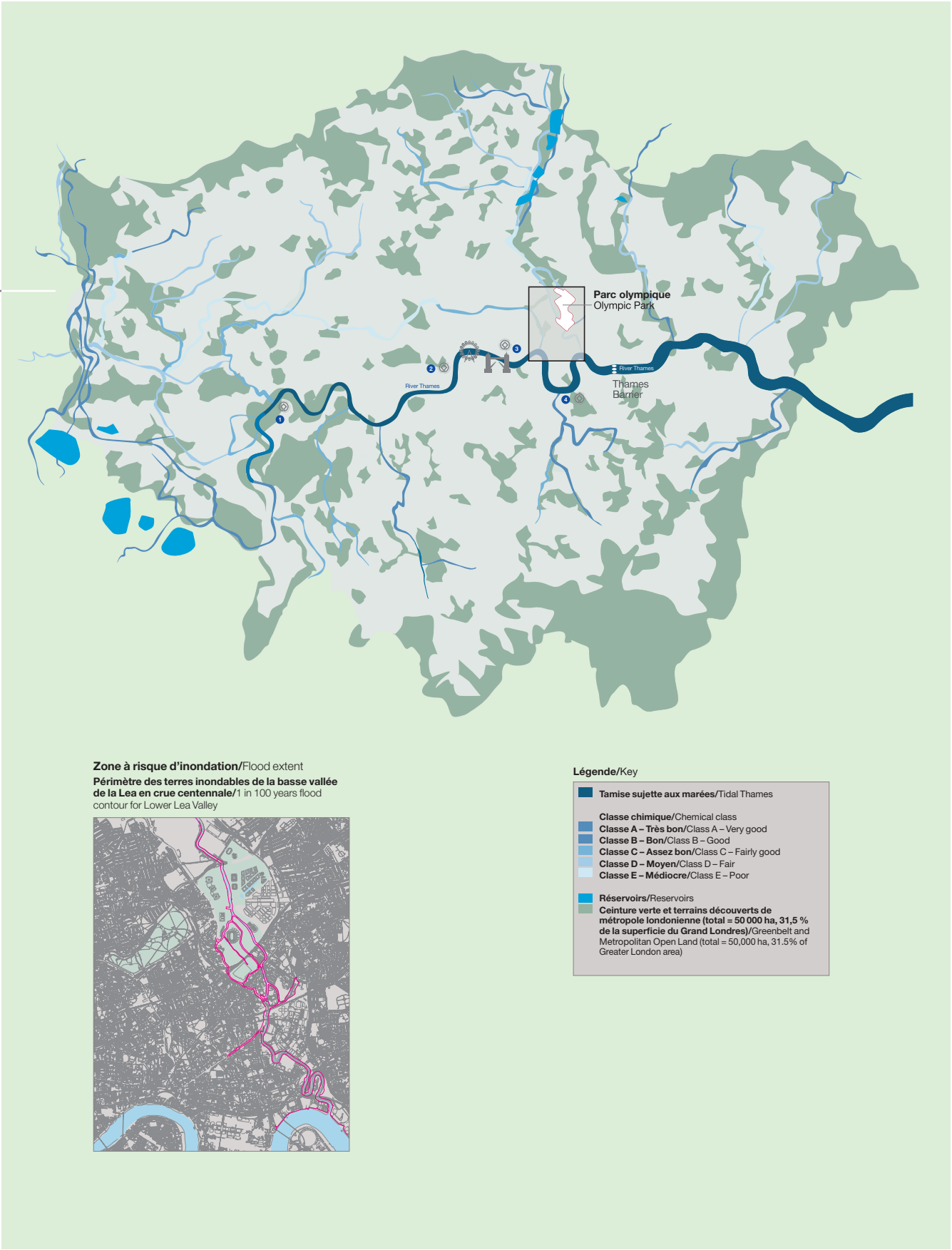
Sustainable public transport was integral to the bid. It focused on minimising carbon emissions produced by Games-related travel and legacy communities. 100 per cent of Games spectators would get to the Park by foot, bicycle or public transport, another first for a Games, and with special provisions for people with disabilities. £10 million would be invested in nine new, permanent strategic footpath and cycle routes leading to and from the Park from surrounding neighbourhoods, one of which would be the Greenway. Once complete, the Park would be served by two national rail lines, one London Overground line, two London Underground lines, the High Speed 1 and Eurostar lines, the Docklands Light Railway and a multitude of bus routes. Even the delivery of construction materials to the Park would, as far as possible, be by rail and water, rather than by road, saving tonnes of carbon emissions. This exceeded the ODA's target of over 50 per cent by weight.

'Lean, green and mean' was the 'energy mantra' for Games and legacy. Buildings and facilities would be designed and constructed to minimise energy demand by including well-designed building envelopes, passive solar design, natural ventilation, efficient

A plan of the waterways and green spaces of London included in London's bilingual bid document prepared in 2004. The bid highlighted the many sites of environmental and cultural importance that London offered, including the river Thames itself. The bid had to demonstrate that staging the Games would not cause any harm to these assets and would contribute to a major environmental enhancement of the Lower Lea Valley.

The visualisation for the Park included in London's bid document prepared by the EDAW Consortium in 2004. This illustrated a unified landscape and architectural design of interconnected waterways and green spaces. The proposed Park would also contribute socio-economic benefits to enhance the legacy value of the site including improved air and water quality and providing recreational and amenity value.







An image of the proposed Park prepared by the EDAW Consortium in 2004. The parklands were a strong element of the bid that would enhance the delivery of the Games through environmental excellence. It provided a key part of demonstrating that sustainability would be embedded in all planning and implementation stages through regeneration of both east London communities and their environment.

lighting and appliances, smart metering to help to manage energy consumption, and green roofs to reduce energy usage by cooling naturally in summer and insulating in winter. Some 20 per cent of the Park's electricity requirements would be met by a new combined heat, power and cooling plant powered by natural gas and biomass with an 82 per cent average efficiency, compared with 45 per cent efficiency for electricity from the National Grid. Photovoltaic panels and small-scale wind turbines would be used where possible. An integrated approach to water management would be adopted. Demand for potable water would be significantly reduced, and a blackwater (recycled effluent) main would be installed. Surface water would be collected where possible, retained and recycled through a system of sustainable drainage, including permeable pavements, green roofs, retention ponds and reed beds, improving water quality in the river Lea and the river Thames.

The biggest economic legacy of the Games would be wider employment opportunities and improvements in the education, skills and knowledge of the local labour force. The nature and range of those skills would enable existing and new residents to have a stake in the economic development of their area, and begin to reduce the deprivation. It was estimated that up to 7,000 full-time equivalent jobs in the construction industry would be created, and around 12,000 permanent jobs as a result of the legacy development of the Park and surrounding areas.³¹

ON YOUR MARKS GET SET, GO!

Winning the bid triggered the start of one of Europe's largest regeneration projects within the United Kingdom's largest regional regeneration programme, the Thames Gateway. In just five years, the Olympic Delivery Authority had to be established, and complete the design and delivery of the 2.5-square-kilometre Olympic Park, ensuring that it would be ready for testing one year ahead of the Games. Not only that, it had to build the teams, develop strategies and policies, and put in place the programme and project management systems that would deliver on the design, development and sustainability targets that had been set in the bid. To put it mildly, there was a more than healthy scepticism that this would be successfully achieved. The UK was not perceived to have a great track record of delivering major projects on time and on budget, never mind against such taxing sustainability targets, and under the baleful eye of the politicians, public and press. Following Jacques Rogge's announcement on 6 July 2005, it really was time to start with the Park.

The 'Fantasticology' annual meadows planted along the south-eastern banks of the City Mill river in peak flower at the start of the Games in July 2012.

