

Environmental Strategy

Overview

Key Objectives

Protect the new and existing population from the impacts of demolition, excavation and construction and sustainably remediate contaminated land:

Require development to reduce flood risk and achieve sustainable water management, including sustainable urban drainage;

Minimise waste generation, including demolition and construction waste, in accordance with the waste hierarchy;

Ensure that the environmental impacts of air pollution and noise and vibration are adequately controlled and minimised; and

Require development to protect and enhance ecology and biodiversity, including the protection of the ecological area adjacent to West Brompton Station.

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12.1 The Government's recently published draft National Planning Policy Statement (July 2011) seeks to "use the planning system to use natural resources prudently and to mitigate and adapt to climate change, including moving to a low-carbon economy". Ensuring that development mitigates and adapts to the impacts of climate change is therefore central to this Environmental Strategy. Climate change mitigation by reducing carbon dioxide emissions is considered in the Energy Strategy. Climate change adaptation through resilient landscape and effective water management is considered below.

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12.2 This chapter therefore sets out requirements to ensure that development in the OA addresses any impact on the environment, including the consideration of construction and demolition, water management, waste, ecology and air and noise/vibration pollution.

Figure 12.1: View looking south, along the railway line from EC2

Context

12.3 Given the size and shape of the OA, together with the nature of existing buildings and railway infrastructure, demolition, excavation and construction are likely to be phased over a 20 year period. The impact of these activities, together with

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associated transport, on existing and new residents will have to be mitigated. These impacts might include:

- Construction traffic, including noise, vibration, emissions, loss of amenity, highway safety, congestion, parking and pedestrian safety;
- Light spill;
- Damage to neighbouring structures, especially heritage and archaeological assets;
- Ground movement;
- Disturbance of unexploded ordnance;
- Creation and exposure of contaminated land leading to pollution of land, air and water;
- Generation of waste;
- Dust and other emissions affecting air quality;
- Energy consumption;
- Noise and vibration; and
- Impacts on ecology.

12.4 Measures to control impacts from noise and vibration, air quality, land contamination, ecology and biodiversity and water conservation are also considered in the relevant sections of this Environmental Strategy. Mitigating the impact of transport, including the movement of construction waste, is also considered in the Transport Strategy.

Policy Context

12.5 The Mayor's London Plan (2011):

- 'Construction, Excavation and Demolition Waste' (Policy 5.18); and
- 'Sustainable Design and Construction' (Policy 5.3)
- 'Aggregates' (Policy 5.20)

12.6 LBHF's Core Strategy (2011):

- 'Waste Management' (Policy CC3); and
- 'Protecting and Enhancing Environmental Quality' (Policy CC4).

12.7 RBKC's Core Strategy (2010):

- 'Earl's Court' (Policy CP10 and associated Vision);
- 'Infrastructure Delivery and Planning Obligations' (Policy C1);
- 'Waste' (Policy CE3);
- 'Air Quality' (Policy CE5); and
- 'Noise and Vibration' (Policy CE6).

12.8 Many of the impacts from demolition, excavation and construction (including air quality, noise, vibration, dust, land contamination and asbestos) are also controlled through other legislation, standards and guidance, such as:

- The control of dust and emissions from construction and demolition; Best Practice Guidance (Mayor of London and London Councils 2006);
- The Construction (Design and Management) Regulations 2007;
- The Control of Asbestos Regulations (2006);
- BS5228: Control of Noise and Vibration on Construction and Open Sites;
- The Site Waste Management Plans Regulation (2008);
- The Definition of Waste: Development Industry Code of Practice, version 2 (CL:AIRE, 2011);
- Control of Pollution Act 1974; and
- Environmental Protection Act 1990.

Demolition, Excavation and Construction Impacts

Mitigating Impacts from Demolition, Excavation and Construction

Key Principle ENV1:

Demolition and excavation waste, including contaminated waste, should be treated, recycled and reused on-site as much as possible. Where this is not possible, this waste, together with construction materials, transported in a sustainable manner, where rail is the preferred transportation method, and disposed of in an approved manner.

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12.9 The remediation, recycling and reuse of contaminated demolition and excavation waste will need to meet the highest standards of environmental sustainability. Demolition and excavation waste should be remediated, recycled and reused on site. Any on-site demolition, excavation or construction plant must minimise any impacts from noise, vibration, dust and emissions on existing and new residents. An assessment of the environmental impacts of remediation works must be undertaken to determine the most appropriate method.

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12.10 Any remediation must be in accordance with the seven stage approach outlined in the Land Contamination Strategy, set out under Key Principle ENV14. A 'soil hospital' where soil can be remediated for re-use on-site should be established in the OA. Areas should also be designated for storing other recycled materials for re-use on-site.

12.11 Redevelopment of the OA has the potential to generate many thousands of vehicle movements over a 20 year construction period, especially considering the volume of demolition and excavation waste and construction materials. These vehicle movements are likely to put pressure on the existing traffic network around the OA. Where remediation, recycling and re-use of materials on-site is not feasible, materials should be transported using the most sustainable method. The West London Line runs along the middle of the OA under Earl's Court 2 and is well located to facilitate the transportation of demolition waste and construction materials by rail. In accordance with LBHF Core Strategy Policy CC3 and RBKC Core Strategy Policy CE3d, development proposals should make use of the rail and waterway network for the transportation of construction waste and other waste. The transportation of contaminated materials must also be considered in any construction management plans or site waste management plans produced for the OA.

Key Principle ENV2:

Construction, demolition and excavation logistics plans must be prepared for every phase of construction and demolition. Access points into the site must be assessed in terms of highway safety, impact on air quality, noise and vibration and also impacts on the new and existing population.

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12.12 Given the size of the OA and phased approach to construction, it is likely that several vehicle access points will be required during the demolition, excavation and construction period. The number of vehicle access and exit points should be minimised and where required, these should be located where they have the least impact on the traffic network; vehicle, cycle and pedestrian safety; and existing amenity within and surrounding the OA.

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12.13 Detailed construction, excavation and demolition logistics plans must be submitted to the relevant Local Authority for every phase of development. These will form part of wider construction, excavation and demolition management plans. Construction, excavation and demolition logistics plans must deal with all aspects of construction and demolition vehicle management, including demolition transportation arrangements, delivery schedules, delivery bookings, routing of vehicles and delivery and turning facilities. Swept paths and tracking diagrams will also need to be included in the plans. Site access points in predominantly residential areas must be avoided, unless there is no other reasonable alternative in which case any impact on the residential amenity must be minimised. Queuing of construction vehicles on the highway network will not be permitted.

Key Principle ENV3:

Planning conditions will be used to require Construction Environmental Management Plans (CEMPs) before any demolition, excavation and construction on each phase of development. Developers will need to keep the new and existing population informed of the progress of the demolition and construction and information on all environmental impacts.

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12.14 The OA is surrounded by a number of existing noise and air pollution sensitive land uses, including a large number of homes, educational facilities, health facilities, community facilities, shopping and leisure uses. The Council will therefore control the impacts of these at source by requiring CEMPs before any excavation, demolition and construction occurs at each phase.

12.15 The CEMPs must include (although not be restricted to):

- An application for Prior Consent for the Works (Section 61 of the Control of Pollution Act 1974) prepared in accordance with BS5228;
- Information on the works and the methods by which they are to be carried out;
- The steps proposed to minimise noise resulting from the works;
- The type of plant to be used and its noise characteristics;
- A programme and sequence of works indicating the predicted noise and vibration levels for each activity at specified noise sensitive sites for each phase of the works;
- Where work phases overlap the cumulative noise and vibration impacts shall be predicted;
- Noise monitoring proposals and methodology;
- Measures to inform the existing population on the progress of works and predicted noise levels over a period of time, including site notice boards and weekly resident liaison meetings;
- Traffic and construction logistics, including measures to reduce vehicle movements;
- Safety for highway users, cyclists and pedestrians;
- Minimising lighting and light spill;
- Protection of heritage assets;
- Procedures for dealing with uncovered archaeological sites;
- Site remediation and procedures for dealing with contaminated material;
- Procedures for dealing with unexploded ordnance;
- Measures for the protection of water resources and preventing contaminated runoff;
- Demolition and construction waste management procedures;
- Measures to prevent and control dust and other emissions to air;
- Energy conservation;
- Measures to protection ecological resources;
- Approaches to screening, including the erection of a solid 2.4m high hoarding around the boundary of each phase, with openings for the public to see the progress of the works; and
- Measures for protecting the wider environment, such as noise, air quality and water, from stockpiled contaminated demolition and exaction waste material.

12.16 Local air quality impacts are also likely during the demolition, excavation and construction phases of the development. The CEMP will also need to identify measures to control and monitor air pollution, taking into account the Mayor of London and London Council's guidance document 'The Control of Dust and Emissions from Construction and Demolition'. Due to the extended construction

phase and proximity of sensitive receptors, real-time air quality monitoring (including baseline monitoring) will be required, where the authorities will need to agree the location of the monitoring equipment, the site trigger levels and what will happen should an exceedence occur.

12.17 There are no designated Archaeological Priority Areas within or adjacent to the OA. However, there is some potential for Roman and earlier archaeology within the OA. The Counter's Creek that ran through the OA also has some topographic, and potentially archaeological, importance. As the OA has archaeological potential, planning conditions will be used to require field evaluations to further understand the archaeological potential of the OA.

12.18 Apart from exceptional circumstances (such as work affecting Underground and Railway Lines undertaken during engineering hours or possessions), noisy building works which can be heard at the boundary of the site can only be carried out during the following permitted hours: Monday to Friday (08:00 to 18:00); Saturday (08:00 to 13:00) and at no time on Sundays or Bank Holidays. Any works carried out outside of permitted hours will need to be kept to a minimum, will be strictly controlled by the borough's Environmental Health departments and the surrounding community will need to be given prior notice.

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12.19 Construction noise and hours of operation are controlled by the borough's environmental health officers through Sections 60 and 61 of the Control of Pollution Act 1974.

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12.20 The noise level at which construction and demolition becomes significant will be assessed in accordance with Annex E of BS 5228-1: 2009. Significance will be based on absolute facade levels of 70dB(A)eqday where existing ambient noise levels, between 08.00 and 18.00, are within the PPG 24 range of noise levels for Noise Exposure Category A and B and 75dB(A)eqday where existing ambient noise levels are within the range of noise levels for NEC C and D. The duration criteria of E4 of Annex E will also apply.

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Key Principle ENV4:

Measures will be required at each phase to minimise and control the impact of demolition, excavation and construction on the environment and residents surrounding the OA.

12.21 Given the close proximity of new and existing residents to the OA, demolition and construction methods should be selected to minimise their environmental impacts on residents in the surrounding area.

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12.22 Developers will be required to establish a Community Liaison Group (comprising construction, local authority and community representatives) managed by a Community Liaison Manager.

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12.23 In accordance with the Site Waste Management Plans Regulations 2008, Site Waste Management Plans (SWMPs) will be required for all developments over £300,000. SWMPs will demonstrate, among other things, how materials will be sourced and used efficiently to minimise waste generation.

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Flood Risk and Sustainable Water Management

Context

12.24 Much of West London, including the OA, is underlain by a shallow aquifer within river terrace deposits along with a deep aquifer within Thanet Sand and Upper Chalk formations. The Environment Agency note that the river terrace deposits underlying the OA constitute a 'Secondary Aquifer' of variable permeability. Records of shallow groundwater levels at the site are unavailable, although groundwater is typically encountered at depths of about 1.5 to 2.0m. A recent report on groundwater levels in the Chalk aquifer (Environment Agency 2007) indicates that the deep aquifer is located about 19m below ground level and the groundwater flows eastwards.

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12.25 Surface water historically drained into the Counters Creek, located in the general area of the existing railway corridor. Counters Creek was then moved to become a combined sewer located under Warwick Road. Given the substantial level changes across the site, surface water at EC1 and EC2 drains eastwards into the Counters Creek sewer. All other former surface drainage ditches are located in sewers, predominantly flowing westwards across the site towards North End Road.

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12.26 Sewerage infrastructure within the area is largely Victorian and contained within a combined storm water and foul water sewer system. The Counters Creek sewer is the most significant combined sewer in the area, serving an area as far north (upstream) as Brent and Camden. In addition to this, an integrated network of sewers and combined sewers traverse the OA. There are issues related to the capacity of this combined sewer in severe storms (see below), which have the potential to affect properties in the area of this combined sewer.

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12.27 The River Thames is located approximately 1.5km to the south of the OA. Water levels in the Thames in this location are subject to tidal movements, yet fluvial flows are relatively insignificant. Flood defences protect this part of London from the risk of flooding associated with tidal and storm surge events.

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12.28 A joint Strategic Flood Risk Assessment (SFRA) was carried out for RBKC, published in August 2009 and LBHF published in June 2010. The SFRA identifies that the majority of the OA in LBHF is located within Flood Zone 3, as defined by the Environment Agency. The area identified as Flood Zone 3 has a high probability of flooding, having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

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small part of the OA, in the area of North End Road and north of West Brompton station, is identified as Flood Zone 2, having a medium probability of annual flooding. his zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% – 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% – 0.1%) in any year. The remainder of the OA (the exhibition centres) is within Flood Zone 1 1, having a low probability of annual flooding of less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%).

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Policy Context

12.29 The Mayor's London Plan (2011):

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- 'Climate Change Mitigation' (Policy 5.1),
- 'Urban Greening' (Policy 5.10),
- 'Green Roofs' (Policy 5.12),
- 'Flood Risk Management' (Policy 5.12),
- 'Sustainable Drainage' (Policy 5.13),
- 'Water Quality and Wastewater Infrastructure' (Policy 5.14), and
- 'Water use and Supplies' (Policy 5.15).

12.30 LBHF's Core Strategy (2011):

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- 'Water and Flooding' (Policy CC2).

12.31 RBKC's Core Strategy (2010):

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- 'Earl's Court' (Policy CE1 and associated Vision)
- 'Climate Change' (Policy CE1), and
- 'Flooding' (Policy CE2).

12.32 London Draft Water Strategy (2009)

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Sewer and Surface Water Flooding

Key Principle ENV5:

Development in the OA will need to ensure that the peak flows entering any combined sewer will either be matched or reduced in comparison to existing peak flows, taking into account the impact of climate change. Developers must consult with and reflect the views of Thames Water and the Environment Agency on the design, capacity, size and construction of the proposed stormwater and sewer network.

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12.33 The combined sewer network (owned and operated by Thames Water) and in particular the Counters Creek sewer, poses the greatest risk of flooding in the OA. This is mainly due to the vast catchment area and the limited capacity of the sewer, which has the potential to back up during extreme rainfall events. This has occurred on several occasions, most recently in July 2007, when several properties along Counters Creek in LBHF and RBKC reported localised flooding.

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12.34 Climate change, and in particular the possible increase in storms, has the potential to increase flood risk. The impacts of climate change therefore need to be taken into account when considering the capacity of, and flows entering, the combined sewer network.

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12.35 Thames Water is preparing a bid to Ofwat for funding for the Counters Creek Sewer Flood Alleviation Scheme which will increase the capacity sewer network. Subject to securing funding from Ofwat and any necessary planning permissions and consents, construction could commence in 2014 with completion likely in 2018. However, the scheme is not yet confirmed. Regardless of the outcome, development must still meet the principles set out above. Thames Water is working with the developer to assess the impact of the development on surface water and foul water drainage.

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12.36 Where possible, gravity should be used to direct flows into the combined sewer network. If pumps are proposed, these should be carefully maintained to guarantee all year round use, so as to not increase flood risk, and sustainably powered to minimise carbon emissions.

Flood Risk Assessment, Mitigation and Adaptation

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Key Principle ENV6:

A Flood Risk Assessment (FRA), including an Exception Test, must be submitted with any major planning applications in the OA as required in accordance with Planning Policy Statement 25.

12.37 In accordance with the Government's Planning Policy Statement 25, RBKC and LBHF have both produced 'Sequential Tests', which seek to prioritise development in Flood Zone 1, then Flood Zone 2 and lastly Flood Zone 3. As 60% of LBHF lies within Flood Zones 2 & 3, LBHF's Core Strategy (2011) states that it would be unreasonable to restrict development to the remaining 40%. Development proposals within the RBKC portion of the OA will need to have regard to findings and recommendations contained within the Council's Sequential Test for the Earl's Court Strategic Site allocation, June 2009.

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12.38 Planning Policy Statement 25 requires planning applications for development proposals of 1 hectare or greater in Flood Zone 1 and all proposals for new development located in Flood Zone 2 and 3 to be accompanied by a FRA. As the OA in LBHF is located with Flood Zone 2 and 3 and the OA in RBKC, is larger than 1 hectare a site specific FRA will be required to accompany applications for comprehensive redevelopment. FRAs will also be required for detailed planning applications at each phase. The FRA must identify all potential sources of flood risk within the OA, and consider approaches to mitigate any risks identified. The FRA must consider the cumulative impacts of different phases, any impacts on surrounding areas, such as upstream of sewer infrastructure, and the impacts of climate change, and consider approaches to mitigate any risks identified. The Environment Agency and Thames Water must be consulted on future planning applications in the OA, including each FRA, and their comments will be taken into account when determining planning applications. Furthermore, as much of the OA is located within Flood Risk Zone 3 and contains land uses classified as "more vulnerable" an exception test is required as part of the planning application.

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Key Principle ENV7:

Self contained basement dwellings will not be permitted in Flood Risk Zone 3. All habitable basement rooms within the OA must be equipped with pumps and non-return valves, and have suitable alternative means of escape.

12.39 In accordance with the Government's Planning Policy Statement 25, self contained basement dwellings will not be permitted in Flood Zones 3. Decking over the railway and TfL depot will change the 'ground level', so development in the OA will need to ensure that any changes in ground level will not increase the risk of flooding, especially where new 'basement' dwellings could be created. The Environment Agency does not object in principle to residential units located 600mm above the statutory flood level provided suitable means of escape are provided and no-return valves are installed.

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Water Conservation

Key Principle ENV8:

Residential development should be designed to limit mains water consumption to 105 litres per person per day or less.

12.40 The London Water Strategy promotes a simple hierarchy for strategic water management of 'lose less', 'use less' and 'reclaim more'. The London Plan Policy 5.15B sets out the Mayor's policy for water consumption, requiring development to minimise the use of mains water by incorporating water saving measures and equipment and designing residential development so that mains water consumption would meet a target of 105 litres or less per head per day. In addition to this, RBKC Core Strategy (2010) Policy CE1 requires development to meet certain Code for Sustainable Homes and BREEAM targets, which include targets for water consumption.

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12.41 Given the presence of an aquifer beneath the OA, borehole abstraction should be investigated as a possible source of potable water. Rainwater harvesting should also be integral to building design. Rainwater harvesting measures can range from simple water butts to more complex systems linking buildings. Rainwater can be used for all non-drinkable uses, such as garden watering, car washing, toilet flushing and clothes washing. Rainwater harvesting must consider the cost and possible carbon emissions from pumping and filtration associated with capture compared with mains water. Gravity fed rainwater harvesting systems are preferred to pumped systems.

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12.42 To ensure water efficiency, all water using appliances installed in buildings in the OA (such as washing machines, dishwashers and shower heads) should be water efficient and industry coded as such. Water butts, aerated and spray taps, low-flow and dual flush toilets, vacuum drainage systems and waterless urinals should also be considered. This will be secured through condition or s.106 agreement as appropriate.

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Sustainable Urban Drainage Systems (SUDS)

Key Principle ENV9:

Development in the OA should aim to reduce the volume of the undeveloped site's surface water run-off at peak times to Greenfield run-off rates or better. Where possible development should aim to achieve 100% attenuation, or at the very least 50% attenuation on site, ensuring that surface water run-off is managed as close to

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its source as possible in accordance with the drainage hierarchy in the London Plan (Policy 5.13), SUDs must be incorporated into the design of buildings and public realm.

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12.43 In addition to floodrisk mitigation measures identified through the FRA and Sequential Test, development must incorporate SUDs to reduce the volume and rate of surface water runoff entering the storm water network.

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12.44 SUDs, either integrated into open space or buildings, are used to a) ease the rate of surface water entering the stormwater system during intense periods of rain, b) allow surface water to be absorbed into the ground as near to where it falls as possible and c) generally reduce the risk of surface water flooding. SUDs can also improve the quality of stormwater run-off, promote biodiversity and provide amenity to open space.

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12.45 Large parts of the OA consist of impermeable surfaces and hard standing which contribute to surface water flooding. The impermeable surfaces and hard standing are predominantly found in the area of Earl's Court 1 and 2, where decking is used to support the structure above the railway lines. There is also hard standing around the Empress State Building and the TfL Lillie Road Depot. Redevelopment of the OA must maximise sustainable urban drainage and where decking, hard standing or impermeable surfaces are required, surface water should be managed as close to its origin as possible and drained to areas of the OA where SUDs are provided.

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12.46 There are numerous SUDs measures that could be implemented across the OA, including:

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- Integrating green space, soft landscaping and planting, which are able to cope with extreme weather conditions, to reduce the impact of overheating, provide shade and attenuate stormwater flows;
- permeable and semi permeable surface materials (including materials used for pavements, driveways and highway construction);
- vegetated swales, basins, drainage channels, infiltration trenches and filter drains, retention ponds, wetlands and rain gardens;
- public and private gardens, green corridors and site wide native planting, including shrubs and trees;
- green and brown roofs and walls integrated into building design; and
- attenuation tanks and permeable soak aways.

12.47 Green and brown roofs on buildings require an impermeable membrane to ensure that water does not leak through the roof structure. This membrane then

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supports a layer of substrate and native vegetation. In addition to absorbing rainfall and dissipating stormwater runoff, green and brown roofs and green walls can sometimes improve the thermal performance of buildings and contribute to residential amenity. It is important that green and brown roofs are well maintained by those who manage the building.

Figure 12.2: Photograph of landscaped drainage channels

Figure 12.3: Photograph of a green roof

Figure 12.4: Photograph of swales at Upton

Figure 12.5: Photograph of Xeriscaping

Waste Management

Context

12.48 The amount of household waste generated in LBHF has decreased by 18 percent since 2005, whilst the recycling rate has increased from 21 percent to 27 percent. In RBKC, household waste generation (by weight) has decreased by 7 percent since 2005 and the recycling rate has increased from 20 percent to 31 percent. The recycling rates in LBHF and RBKC are higher than many other London Boroughs and greater levels of recycling are anticipated in the medium to long term, as assessed against the Mayor's London Plan (2011) targets.

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12.49 Both boroughs' waste transfer, disposal, recycling and processing services are currently provided by the Western Riverside Waste Authority (WRWA). These arrangements will continue due to contractual obligations until 2025. Municipal waste from within the WRWA area that previously went to landfill now goes to a new river fed energy-from-waste incinerator at Belvedere, Bexley. Co-mingled dry recycled material is now processed within the WRWA area, following the recent opening of a new facility at Smugglers Way, Wandsworth.

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12.50 The Waste Management Strategy for London (2010) sets the following targets:

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- achieve zero municipal waste direct to landfill by 2025;
- reduce the amount of household waste by 20 percent by 2031;
- recycle or compost at least 45 per cent of municipal waste by 2015, 50 per cent by 2020 and 60 per cent by 2031; and
- reuse and recycle 95 per cent of construction, excavation and demolition waste by 2020.

12.51 There are currently no dedicated waste or recycling handling facilities within the OA. All commercial waste generated by The Earl's Court Exhibition Centres is currently collected by a private contractor and disposed of under separate arrangements.

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Policy Context

12.52 The Mayor's London Plan (2011):

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- 'Waste Self-Sufficiency' (Policy 5.16), and
- 'Waste Capacity' (Policy 5.17).

12.53 LBHF's Core Strategy (2011):

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- 'Waste Management (Policy CC3).

12.54 RBKC's Core Strategy (2010):

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- 'Earl's Court' (Policy CP10 and associated Vision),
- 'Earl's Court Exhibition Centre Strategic Site' (Policy CA7), and
- 'Waste' (Policy CE3).

12.55 Waste Strategy for England (2007)

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12.56 Waste Management Strategy for London (2010)

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Waste Collection and Management Systems

Key Principle ENV10:

Redevelopment of the OA must deliver sustainable waste collection and management systems, taking into account industry best practice.

12.57 To deliver sustainable waste collection and management systems, development in the OA must accord with LBHF's 'Storage of Refuse and Recyclables' SPD and RBKC's 'Wastescape Design Guide' and incorporate the following principles:

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- Maximise recycling and waste diversion at source (e.g. in kitchens);
- Integrate with existing waste collection systems and infrastructure in LBHF and RBKC;
- Be cost effective;
- Accommodate green waste diversion and composting;
- Provide sufficient size and easily accessible refuse and recycling storage areas;
- Minimise refuse vehicle movements;
- Ensure that the highway network can accommodate refuse vehicles;
- Ensure that on-street street parking does not obstruct refuse vehicles; and
- Provide easily accessible bulky waste collection areas.

12.58 The authorities consider that a combination of standard bin stores and a chute-based suction system (Envac) would be most suited to development in the OA.

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12.59 In accordance with the Site Waste Management Plans Regulations 2008, Site Waste Management Plans must be prepared and implemented for development in the OA. The Site Waste Management Plan must be prepared in accordance with Defra Guidance and will be secured via any Section 106 agreement.

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Centralised Waste Facility

Key Principle ENV11:

At least one centralised waste management facility must be provided in the OA.

12.60 At least one centralised, on-site, waste management facility must be provided in the OA to manage the collection, sorting and storage of waste (including bulky items). This facility must be large enough to accommodate waste generated from the development at each phase and contribute to meeting the borough's waste

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apportionment targets. This facility should not impact on new or existing residential amenity, in terms of air quality and noise. Location, mitigation measures and/or a suitable buffer will therefore be required between any waste facility and sensitive land uses, such as residential dwellings. This facility will also be subject to the requirements in the Air Quality and Noise / Vibration sections of this Environmental Strategy. A centralised facility would ideally be located underground on the periphery of the OA and have good vehicular access to the strategic road network. Development proposals should also explore and where deemed appropriate use the waste facility to generate energy from waste.

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Encouraging Waste Minimisation, Reuse and Recycling

Key Principle ENV12:

In addition to regulatory approaches, redevelopment in the OA should contribute towards reducing, reusing and recycling waste through non-regulatory and education based approaches.

12.61 In addition to regulated waste collection and management systems there are numerous non-regulatory and education based approaches to reduce, reuse and recycle waste, that should be implemented in the OA.

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12.62 Cupboards with integrated waste sorting facilities should be installed in every kitchen to encourage the separation of waste from recyclables. All kitchens, and other points of waste disposal, should also provide information on what can and cannot be recycled. Information should also be provided on waste reduction, such as buying loose fruit and vegetables to minimise packaging; using reusable bags and lunch boxes to reduce the use of plastic bags; buying goods in bulk, such as washing up liquid; insisting on 'no junkmail'; using taps or home filtered water rather than bottled water; buying products from recycled materials and composting garden waste.

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12.63 Waste minimisation measures should be promoted by on-site waste management arrangements and approaches to changing behaviour in consultation with LBHF and RBKC waste and recycling officers.

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Composting

Key Principle ENV13:

Redevelopment of the OA should provide green waste and kitchen waste collection to support a community led composting scheme.

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| 12.64 Composting can be undertaken on a small scale domestic basis or community wide composting could be delivered through green and kitchen waste collection and disposal. Developers in the OA should set up a community led composting scheme, taking into account the guidance of the Community Composting Network (CCN).

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Land Contamination and Remediation

Context

12.65 A rich history of industrial land uses and practices has resulted in the potential contamination of land within the OA. These land uses include a former coal and goods depot, railway sidings, a brewery, laundries, an infilled canal and some works and factories that included chemical and fuel storage. Adjacent to the OA, potentially contaminative uses include a former brickfield (infilled with unknown material), a rifle range and a hospital. Current potentially contaminative uses include the TfL depot, laundries, dry cleaners and a mannequin manufacturer. Nearby off-site potential sources include a petrol station.

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12.66 The portion of the OA within LBHF and some parts within RBKC are therefore identified as potentially contaminated (under Part IIA of the Environmental Protection Act 1990) due to the probable risks associated with the past and present uses of the site.

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12.67 Land within the OA must be suitable for use prior to development and all potential contamination must be identified, assessed and remediation must be implemented. Remediation should be sustainable and not adversely impact the environment.

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Policy Context

12.68 **The Mayor's London Plan (2011):**

- 'Contaminated Land' (Policy 5.21).

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12.69 **LBHF's Core Strategy (2011):**

- 'Protecting and Enhancing Environmental Quality' (Policy CC4).

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12.70 **RBKC's Core Strategy (2010):**

- 'Earl's Court' (Policy CP10 and associated Vision).

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12.71 **RBKC's Unitary Development Plan (2002) Saved Policies:**

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- 'Require additional information for developments on contaminated land' (Policy PU3), and
- 'Ensure appropriate protection for future users of contaminated land' (Policy PU4).

12.72 Guide to help developers meet planning requirements, 2004 (various boroughs including RBKC but excluding LBHF), which is to be updated in 2011.

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12.73 LBHF Draft Guidance for Developers of Land where Contaminated Land may be an Issue (2011)

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12.74 Land contamination is also controlled through other legislation, such as:

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- Part IIA of the Environmental Protection Act 1990;
- Contaminated Land (England) Regulations 2006;
- Defra Circular 01/2006 Contaminated Land Statutory Guidance;
- Environmental Permitting (England and Wales) Regulations 2010;
- The Hazardous Waste (England and Wales) Regulations 2005;
- The Environmental Damage (Prevention and Remediation) Regulations 2009; and
- Building Regulations 1991 (Building Act 1984).

12.75 Guidance also exists to aid developers, environmental consultants and local authorities in addressing potentially contaminated land, including:

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CLR 11: Model procedures for the management of Contaminated Land (Defra, 2004);

BS10175, The Investigation of Potentially Contaminated Land Sites;

The Definition of Waste: Development Industry Code of Practice, version 2 (CL:AIRE, 2011);

Assessing risks posed by hazardous ground gases to buildings (CIRIA 665, 2007); and

The VOCs Handbook. Investigating, assessing and managing risks from inhalation of Volatile Organic Compounds (VOCs) at land affected by contamination (Ciria 682, 2009).

Assessment and Sustainable Remediation

Key Principle ENV14:

Construction in the OA shall only begin once any potential land contamination has been identified, assessed and remediated in accordance with the stages below.

12.76 Potentially contaminated land should be identified, assessed and remediated in accordance with the following seven stages:

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- Preliminary Risk Assessment: This assessment should comprise of a desk top study which includes details of past and present uses at the site and the surrounding area to identify any potential sources of contamination. This should include a search of Council planning records. Any pollutants associated with these sources should be identified along with their potential related risks. It should then be determined what sensitive receptors are likely to be present at the development site such as humans, ecological receptors or building materials. Any pathway from potential on-site sources to off site sensitive receptors should also be identified. A conceptual site model should be produced to demonstrate where any pathway connects any of these sources to the sensitive receptors. This Source-Pathway-Receptor connection is known as a pollutant linkage.
- Site Investigation Scheme: This scheme is based upon the preliminary risk assessment and should set out how the site investigation will be carried out, how the sources of pollution identified in the conceptual site model will be targeted and determine the existence of the pathway to the identified receptors.
- Site Investigation: This investigation should follow the approved scheme and be undertaken using current guidance and methods. The results of the investigation must be clearly presented, compared against recognised and approved standards and interpreted so that it is clear for both Councils to see where remediation action is required.
- Risk Assessment: The results of the site investigation should be assessed to determine the degree and nature of any contamination on the site and the risks posed by any contamination to human health, controlled waters and the wider environment. The conceptual site model should be revised with the information gathered through the site investigation to confirm the existence of any remaining pollutant linkages.
- Remediation Strategy: A detailed method statement for any required remediation works identified through the risk assessment should be produced with the aim of breaking any pollutant linkages.
- Verification: A report should be produced which validates and verifies that all of the works outlined in the remediation strategy have been undertaken as agreed. This would include details such as analytical results confirming successful in-situ remediation or importation or clean top-soil cover, the proper placement of gas

membranes and waste transfer tickets demonstrating a duty of care in handling any off site transfer of excavated soil.

- On-going monitoring: If during development, contamination not previously identified is found to be present at the site, the Council should be immediately informed and no further development (unless agreed in writing by the Council) shall be carried out until a report indicating the nature of the contamination and how it is to be dealt with is agreed in writing by the Council. There may also be situations in which confirmation that remediation has been successfully achieved or abated is necessary and monitoring past the completion of development is required. The scope of any monitoring should be agreed in writing by the Council. These works should then be reported to and agreed in writing by the Council, when it is demonstrated that no residual adverse risks exist.

Key Principle ENV15:

The remediation strategy will need to demonstrate that measures with the least environmental impact have been selected, especially considering transport and on-site treatment.

12.77 During the investigation, remediation, validation and on-going monitoring of potentially contaminated land, works with the least environmental impact should be selected. Environmental impacts should include carbon emissions, transportation of waste, air pollution, water pollution and noise and vibration from the works. In particular, an assessment of the environmental impacts of remediation works must be undertaken to determine the most appropriate method. The removal of contaminated land off-site should be considered the last option after more sustainable methods such as in-situ and on-site remediation. The phased approach to this development provides an opportunity to locate stockpiles of material for re-use on-site, near the soil hospitals where this material would be treated. Any in-situ remediation which may alter the hydrogeology of the site should be assessed to ensure it does not adversely impact surface water drainage and groundwater flow in the area.

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Air Quality

Context

12.78 LBHF and RBKC are both designated as Air Quality Management Areas (AQMA). This designation is due to levels of nitrogen dioxide (NO₂) and particulate matter (PM₁₀) in both boroughs that breach the Government's air quality objectives. Vehicles using Talgarth Road/West Cromwell Road (A4), Warwick Road, North End Road and Lillie Road are one of the main sources of NO₂, PM₁₀ and PM_{2.5} emissions affecting the OA. Buildings are also responsible for a significant amount of local emissions, especially NO₂ from gas boilers. Figures 12.6 and 12.7 show the predicted annual mean levels of PM₁₀ and NO₂ in 2008 respectively, using data from the London Atmospheric Emissions Inventory 2008 (<http://data.london.gov.uk/laei-2008>). Figure 12.8 shows the number of days per year (in 2010) that PM₁₀ exceeded the Government's objectives.

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Figure 12.6: Predicted annual mean levels of PM₁₀ in 2008, with the Government's objectives shown in a blue line
Figure 12.7: Predicted annual mean levels of NO₂ in 2008, with the Government's objectives shown in a blue line
Figure 12.8: Number of days per year (in 2010) that PM₁₀ exceeds the governments objectives, which are shown in a blue line

Policy Context

12.79 The Mayor's London Plan (2011):

- 'Improving Air Quality' (Policy 7.14)

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12.80 LBHF's Core Strategy (2011):

- 'Protecting and Enhancing Environmental Quality' Policy CC4.

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12.81 RBKC's Core Strategy (2010):

- 'Earl's Court' (Policy CP10 and associated Vision)
- 'Air Quality' (Policy CE5).

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12.82 RBKC Air Quality SPD (2009) and Air Quality Management Progress Report (updated annually)

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Improving Air Quality

Key Principle ENV16:

Redevelopment in the OA ~~should~~ be ~~at least~~ air quality neutral against existing levels and should include mitigation measures to improve air quality in accordance with the Mayor's Air Quality Strategy and local air quality action plans.

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12.83 A Low Emission Strategy (LES), incorporating an air quality assessment, ~~which compares current and future emissions,~~ will be required to assess the current and future air quality within the OA. The LES also needs to consider the potential air quality impacts, including health impacts on residents and other sensitive receptors, following each phase of development in the OA.

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12.84 The LES will need to propose measures to ensure that development is air quality neutral at each phase and where appropriate, set out measures to improve air quality (see possible mitigation measures below) in accordance with the Mayor of London's Air Quality Strategy and local air quality action plans. It may also be necessary to implement design solutions to minimise exposure to poor air quality, such as locating less sensitive uses in areas of poor air quality and/or incorporating appropriate mitigation measures.

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12.85 The adoption of energy efficient building design and integration of low / zero carbon heat technologies (such as Combined Heat and Power (CHP) systems, heat networks, photovoltaics, heat pumps etc) can help to reduce NO2 emissions from domestic and commercial gas boilers. However, some renewable technologies such as biofuelled CHP plants and biomass energy systems can potentially increase local emissions of NO2 and PM10, possibly impacting on air quality. The LES will therefore need to demonstrate how the impacts from any proposed installations are mitigated.

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12.86 In addition to the Mayor of London's Air Quality Strategy (2010), both boroughs have air quality action plans setting out measures to reduce emissions, improve local air quality and work towards meeting Government objectives. There are a number of mitigation measures, both regulatory and non-regulatory, that can help to reduce the impact of development on air quality. The LES will need to consider the feasibility of each of the following (but not limited to) mitigation measures;

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- locate non-residential and/or mixed use buildings along the Talgarth Road/West Cromwell Road (A4) and ensure residential buildings along heavily trafficked roads are recessed or incorporate further mitigation measures listed below;
- incorporate significant tree planting, planted areas or other green landscaping as barriers along major roads;
- limit emissions from heating and cooling of buildings by using passive heating and cooling designs and the use of low emission low/zero carbon technologies and where necessary use abatement technology;
- limit the ratio of off-street car parking to new dwellings in accordance with the Transport and Accessibility Strategy (Chapter 10) thus encouraging a low level of car ownership;
- require 20% of car parking spaces to provide electric vehicle charging facilities to encourage the uptake and use of these vehicles;
- implement 20mph zones and shared surface treatments on certain roads to reduce through traffic; and
- encourage walking and cycling by improving connectivity through the OA, improving access to public transport and requiring a green travel plan.

Noise and Vibration

Context

12.87 The main sources of noise and vibration in the OA are from road traffic, London Underground trains, West London Line trains (including freight trains) and aircraft on the Heathrow flight paths. The use of the TfL Lillie Road Depot for emergency track repairs and events at the Exhibition Centres also causes noise and vibration although these two sources of noise will be discontinued with redevelopment of the OA.

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Policy Context

12.88 The Mayor's London Plan (2011):

- 'Reducing Noise and Enhancing Soundscapes' (Policy 7.15).

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12.89 LBHF's Core Strategy (2011):

- 'Protecting and Enhancing Environmental Quality' (Policy CC4).

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12.90 RBKC's Core Strategy (2010):

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- 'Earl's Court' (Policy CP10 and associated Vision); and
- 'Noise and Vibration' (Policy CE60).

12.91 Sounder City – The Mayors Ambient Noise Strategy

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12.92 RBKC Noise SPD (2009)

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12.90 Noise and vibration is generally controlled through environmental protection legislation and British Standard Codes of Practice, including:

- World Health Organisation: Guidelines for Community Noise (1999);
- BS 8233:1999 (Sound Insulation and Noise Reduction for Buildings – Code of Practice);
- BRE/ Ciri 'Sound Control For Homes'
- BS 4142: 1997 - Rating industrial noise affecting mixed residential and industrial areas;
- BS 6472:2008 'Guide to Evaluation of human exposure to vibration in buildings (1Hz to 80Hz)';
- Building Bulletin 93 (BB93): Acoustic design of schools;
- Approved Document E - Resistance to the passage of sound;
- Control of Pollution Act 1974; and
- BS Code of Practice BS 5228 for noise vibration control on construction sites .

Mitigating Noise and Vibration

Key Principle ENV17:

Development must be designed and constructed to mitigate and adequately control noise and vibration. Noise and vibration sensitive land uses must also be located away from sources of noise and vibration, unless mitigation measures reduce the noise and vibration to acceptable levels.

12.93 In addition to the existing sources of noise and vibration, several proposed land uses in the OA have the potential to generate noise or vibration. These include new cultural facilities, bars and restaurants, road traffic, delivery vehicles and building services plant. Noise and vibration associated with the construction and demolition process is also a concern for the existing population, especially given the scale of development, phasing and the long term duration of construction. This is further considered in the section on 'Demolition, Excavation and Construction Impacts'.

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12.95 Planning applications in the OA must be accompanied by a noise impact assessment, prepared in consultation with authority Environmental Health Officers. This assessment will need to identify existing and potential sources of noise and vibration and the potential impacts and mitigation measures for the existing and new population. Noise sensitive land uses, such as residential dwellings, schools and hospitals, are those sensitive to existing sources of noise. The noise impact assessment will also need to determine the Peak Particle Velocity (PPV) and Vibration Dose Value (VDV) levels to establish the impact of traffic, including the impact of freight and passenger trains using the West London Line and District Line on buildings and general amenity.

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12.96 In accordance with National and European legislation, the Department for Environment, Food and Rural Affairs (Defra) is currently implementing a requirement to prepare Noise Action Plans (NAPs) that address and improve noise within the noisiest areas. The London Agglomeration NAP (March 2010) identified roads adjacent to the OA, including West Cromwell Road and Warwick Road, as containing "1st priority" locations for further investigation of traffic noise levels. The Highway Authority, in consultation with Environmental Health, must give consideration to how traffic noise in these 1st Priority Locations can be minimised through the use of appropriate mitigation measures. Given the scale of the proposed development, its location bounded by four major roads, including West Cromwell Road, and the likely impact of road traffic noise from the development, the NAP shall be required to include the major development proposals within the OA. Applicants will need to work closely with the Highway Authority and Environmental Health Departments to ensure

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that development proposals contribute to the production and implementation of the [Defra](#) NAP.

Residential Noise Standards

12.97 All new housing should be designed to ensure that the internal noise levels are 'good' in accordance with BS8233, where individual noise events should not normally exceed 45 dB LAMax at night in bedrooms. Acoustically attenuated passive or mechanical ventilation should be installed as necessary. The location, design and internal layout of residential accommodation should ensure that living areas are located away from primary noise sources. Buildings should also be laid out so that alike rooms are above each other (i.e. bedrooms over bedrooms) and avoid stairs / common parts next to noise sensitive rooms.

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12.98 Developments should be constructed so that the impact of vibration from existing road, rail and industrial / commercial premises (e.g. gyms) falls into the category of 'Low Probability of adverse comment' as defined in BS6472. Private and communal gardens should be designed where practicable so that the steady noise level does not exceed the upper limit as cited in BS8233.

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Industrial and Commercial Noise Standards

12.99 All developments and/or associated plant should be designed to ensure the existing ambient background noise levels at the nearest noise sensitive premises are not increased (i.e. that the rated level is at least 10dB (A) below the measured background level). Assessment shall be in accordance with [the detailed requirements of the RBKC Noise SPD in both boroughs.](#)

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12.100 Commercial servicing areas should be located away from residential areas and/or enclosed where possible. Delivery, goods handling operations and collection times will need approval as part of a servicing management plan to be secured by condition of planning permission. [Noise from these activities shall be assessed as per section 6.3 of the RBKC Noise SPD in both boroughs.](#)

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Entertainment Noise Standards

12.101 Any development that provides music or entertainment (e.g. restaurants, pubs, clubs, and retail outlets) must be designed and constructed to ensure that the activities are inaudible at any noise sensitive premises, especially residential premises. Noise from these uses shall be assessed as per chapter 8.0 of the RBKC Noise SPD in both boroughs.

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School Noise Standards

12.102 New educational facilities or improvements to existing facilities should be done so in accordance with Part E of the Building Regulations 2003 and Building Bulletin 93: Acoustic Design for Schools.

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Ecology and Biodiversity

Context

12.103 Ecology and biodiversity within the OA is predominantly found in a semi-natural green corridor running along the West London Line. There are two Sites of Nature Conservation Importance (SNCI) within this corridor (both Borough Grade I), and a further 12 SNCIs within 1km of the OA (all Local) including Brompton Cemetery. The 'Earl's Court and West Kensington OA – Ecological Aspirations report', which supports this SPD, sets out details on the ecological value of these SNCIs, including details of species found within 1km of the OA.

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Policy Context

12.104 The Mayor's London Plan (2011):

- 'Urban Greening' (Policy 5.10),
- 'Green Roofs and Development Site Environs' (Policy 5.11), and
- 'Biodiversity and Access to Nature' (Policy 7.19).

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12.105 LBHF's Core Strategy (2011):

- 'Improving and Protecting Parks and Open Spaces' (Policy OS1).

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12.106 RBKC's Core Strategy (2010):

- 'Earl's Court' (Policy CP10 and associated Vision); and
- 'Biodiversity' (Policy CE4).

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12.107 LBHF Draft Biodiversity Action Plan and RBKC Biodiversity Action Plan.

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12.108 London Biodiversity Action Plan.

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12.109 Biodiversity 2020: A strategy for England's wildlife and ecosystem services (2011), DEFRA.

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12.110 LBHF Parks Strategy.

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12.111 Paragraphs 98 and 99 of Circular 06/2005 and Paragraph 16 of Planning Policy Statement 9 also provides information on Biodiversity Action Plans and the consideration of protected species in the planning system. Natural England has also produced guidance on likely impacts of development proposals on protected species.

Protect and Enhance Ecology and Biodiversity

Key Principle ENV18:

Development will be expected to protect and enhance ecology and biodiversity within and adjacent to the OA with no net loss of species or habitat by:

- Protecting and enhancing the Sites of Nature Conservation Importance (SNCI) adjacent to the northbound West London Line platform at West Brompton Station;
- Replacing other Sites of Nature Conservation Importance to a significantly higher standard within the OA;
- Ensuring that there is no net loss (in area) of Sites of Nature Conservation Importance;
- Creating further habitats through the provision of open space, landscaping and tree planting focussing on priority native habitats suitable to the area (acid grassland, woodland and freshwater habitats);
- Ensuring that all green open space is connected to form a network of green spaces, with a focus on north-south connectivity;
- Delivering Sustainable Urban Drainage systems in the form of swales, rain gardens, ponds and surface drainage systems to provide habitat diversity;
- Requiring, where feasible, for all buildings to include green and brown roofs, together with some green walls, to encourage biodiversity habitats, facilitate migration, improve insulation, reduce the impact of the urban heat island effect, help regulate building temperatures and attenuate stormwater flows;
- Minimising light pollution to areas sensitive to bats and other wildlife.

Key Principle ENV19:

Major planning applications in the OA must be accompanied by an Ecological Impact Assessment, including an ecological survey and ecological enhancement strategy. An ecological management plan will also be required through any Section 106 agreement.

12.112, Owing to its important habitat and SNCI designation, development will need to protect the ecological habitat immediately to the west of the West London Line northbound platform. This area is managed by the Local Agenda 21 Forum in partnership with Network Rail. If access to West Brompton Station is improved, proposals will need to be designed to incorporate this ecological feature. It contains a natural pond with water flowing from the exposed river gravels sitting on clay, which

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have allowed for a luxuriant growth of great reedmace (*Typha latifolia*), with smaller amounts of water plantain (*Alisma plantago-aquatica*) and floating sweet-grass (*Glyceria fluitans*). Also found in the area are *Ranunculus lingua* and *Scrophularia auriculata*, which are not found elsewhere in LBHF. There have also been sightings of *Bufo bufo* (the common toad) and *Acheta domesticus* (the common cricket) and has an extensive habitat for *Lucanus Cervus* (stag beetles). This area was botanically surveyed by LBHF biodiversity officers in June 2010 and when 99 native vascular plants were identified on one day.

12.113 The OA contains some valuable areas for ecology and biodiversity, especially along the railway lines. However, an important component of this framework is that development improves east-west connectivity by decking over the railway lines. The proposed decking over the West London Line and District Line provides publicly accessible green open space in the form of a linear park. The nature of this linear park, and open space in general, is set out in the Urban Form Strategy (Chapter 4). It is imperative that in addition to the space to be provided for recreational purposes in the linear park, additional space is provided to accommodate the re-provision of SNCIs affected by decking over the railway lines. In order to justify the potential disruption and relocation, the new ecological and biodiversity areas must provide significantly better habitats than currently exist in the OA and these must be provided on-site.

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12.114 In addition to this, other elements of the development must be designed to improve the ecology and biodiversity value of the OA, and protect SNCIs adjoining the OA, such as through the provision of native species of street trees, landscaping, green and brown roofs/walls and Sustainable Urban Drainage systems (swales and open water courses). The OA is also well located to attract protected species such as Great Crested Newts and bats roosting in trees or under old arches and measures to encourage these species should be considered. Significant piles of dead wood from large logs may also be ideal habitat for *Lucanus cervus*, (the stag beetle).

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12.115 Major planning applications in the OA must be accompanied by an Ecological Impact Assessment, including consideration of the impact of development on adjoining SNCI and an ecological enhancement strategy. An ecological management plan will be secured through any Section 106 agreement. These documents will need to reflect LBHF (Draft), RBKC and London Biodiversity Action Plans (BAPs), which identify local habitats that are important in both boroughs and the borough's strategy to improve ecology and biodiversity.

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Figure 12.9: The vegetation and semi-natural refuge that runs alongside the West London and District Lines

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