

creating a better Thames



Good practice case studies

Positive planning with councils and developers in London

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Introduction

These sites have been selected as good practice sites to demonstrate the types of environmental enhancement that can be achieved with good partnership working and positive planning.

These enhancements include measures to adapt to climate change including reducing risk from flooding and sea level rises; providing good quality environments to improve people's lives; and creating a healthy and diverse natural environment.

This is just a small selection of the type of major projects the Environment Agency has been working with developers on. Collectively these sites will deliver an impressive list of environmental improvements:

- Approximately three miles of renewed and restored flood defences – this is the distance from Charing Cross train station to Battersea Park along the River Thames
- 2,356 cubic metres of additional surface water storage – equivalent to an Olympic size swimming pool
- A potential 12 hectares of new green roofs delivering a range of social, environmental and economic benefits – this is almost the size of 25 football pitches
- Approximately three miles of new riverside paths – that's about the same length as 350 narrow boats moored up end to end along a river.

“We are a key consultee in the planning process working to ensure new development maximises environmental improvement. By encouraging early discussions we have improved the quality of developments by working in partnership to secure a better environment for people and wildlife.”

Howard Davidson, Thames Regional Director



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Good practice site 1

Chambers Wharf, Southwark – St Martins Property Investments Ltd

Situated just to the east of Tower Bridge on the south bank of the River Thames, Chambers Wharf was for many years one of the capital's major cold stores. Having fallen into disuse, the site, owned by international property development company St Martins, now has planning permission for 587 new homes; 180 of these homes will be affordable and there will be some retail units at ground level, fronting Chambers Street.

Demolition of the former cold stores has been completed and the new scheme is scheduled to be finished in 2013.



“We recognised from the outset that we must work closely with the Environment Agency to meet all the statutory criteria whilst at the same time creating a world class residential development which leads the way in sustainable development and fulfils St Martins’ own CSR commitments.”

Lindsey Robinson, Development Director, St Martins



Good practice site 1

Chambers Wharf, Southwark – St Martins Property Investments Ltd

Flood risk management benefits

- 160 metres of renewed flood defences.
- 232 cubic metres of additional flood storage volume provided.
- Ground level will be one metre higher to reduce the residual flood risk.
- The buildings are being set back nine metres from the new retreated Flood Defence to provide operational access.
- Shared flood risk assessment with neighbouring sites.

Brownfield land regeneration

- The site was formerly an 18th and 19th century shipyard. The river warehouses and cold stores which have been demolished to make way for the new scheme were initially built in the 1930s to store imported meat and other foodstuffs, and were used for this purpose up until the 1980s.

Habitat and conservation value

- Removal of old jetty structure which reverses encroachment into the Thames and creates new foreshore habitat.
- New habitat creation includes nesting boxes, roosting posts and green space for birds and bats.

Increased riverside recreation

- A new 160 metre riverside walkway, with public and private gardens adjacent to the river, will be created.

Recycling of demolition material

- Removed over 50,000 tonnes of crushed concrete and steel from the site by river using barges which transported the material to a recycling depot 25 miles away. St Martins had to overcome a number of administrative obstacles in order to be able to use the river.
- Estimated 6,000 lorry movements eliminated.
- Around 60% of all materials were recycled via barge transport, with the remaining materials crushed on site and retained for reuse in the new development.

Sustainable design and construction

- Green roofs across the site. 3,900 square metres of amenity and biodiverse roofs.
- ‘Excellent’ Eco Homes rating. Carbon emission reduction in excess of 30% lower than Building Regulations Part L 2006.
- Renewable energy: Combined heat and power units designed for conversion to biofuels when the technology is available, ground source heating and cooling, solar thermal panels.
- Sustainable Underground Drainage which incorporates rainwater harvesting and stormwater attenuation.
- Wind generated energy proposed: A weather station has been installed on site to assess wind power options.



Good practice site 2

‘The Ram Brewery Site’ (Wandsworth Town Centre) – Minerva Plc

The Ram Brewery Site is located in Wandsworth Town Centre and comprises the former Youngs Brewery which for over 150 years has been a familiar local landmark for both Wandsworth residents and visitors. The site is divided by the River Wandle which runs south to north and joins the River Thames 500m to the north.

The scheme proposes opening up the site to the public for the first time in its history and provides 1.02ha of high quality public realm, including two public open squares, each framed by the refurbished listed brewery buildings and riverside walkways. In addition, the development will provide 1,036 residential units in the form of two towers and space for a mix of uses including office, retail, leisure units and a microbrewery.

“It has been a pleasure working with the Environment Agency who we engaged with at an early stage of the project. A proactive approach was taken, which ensured a good understanding of each party’s requirements and will undoubtedly lead to delivery of high levels of environmental improvement.”

Mark Cherry, Investment Director



Good practice site 2

'The Ram Brewery Site' (Wandsworth Town Centre) – Minerva Ltd

Flood risk management benefits

The site needs to be protected from future flood risk, taking the effects of climate change into account.

The development includes:

- 400 metres of replaced and refurbished flood defences;
- new access space for flood defence maintenance
- retreated flood defence line along the river corridor to create space for intertidal terracing used for wildlife habitat improvement;
- raising the river wall level to increase protection from river flooding;
- safeguarding the river wall's integrity from underground and overground development pressures;
- sustainable drainage infrastructure in line with the Sustainable Drainage Systems (SUDS) hierarchy to decrease flows to the currently overloaded and combined sewer systems.

Land decontamination and brownfield land regeneration

- A planning condition has been added to deal with contamination on the site. The main sources of contamination are the former fuel tanks associated with the brewery and the infilled canal.
- Constructing the proposed basement would necessitate the removal of the majority of contaminated soil. The soil will be managed in accordance with legislation and best practice guidance.

Habitat and conservation value

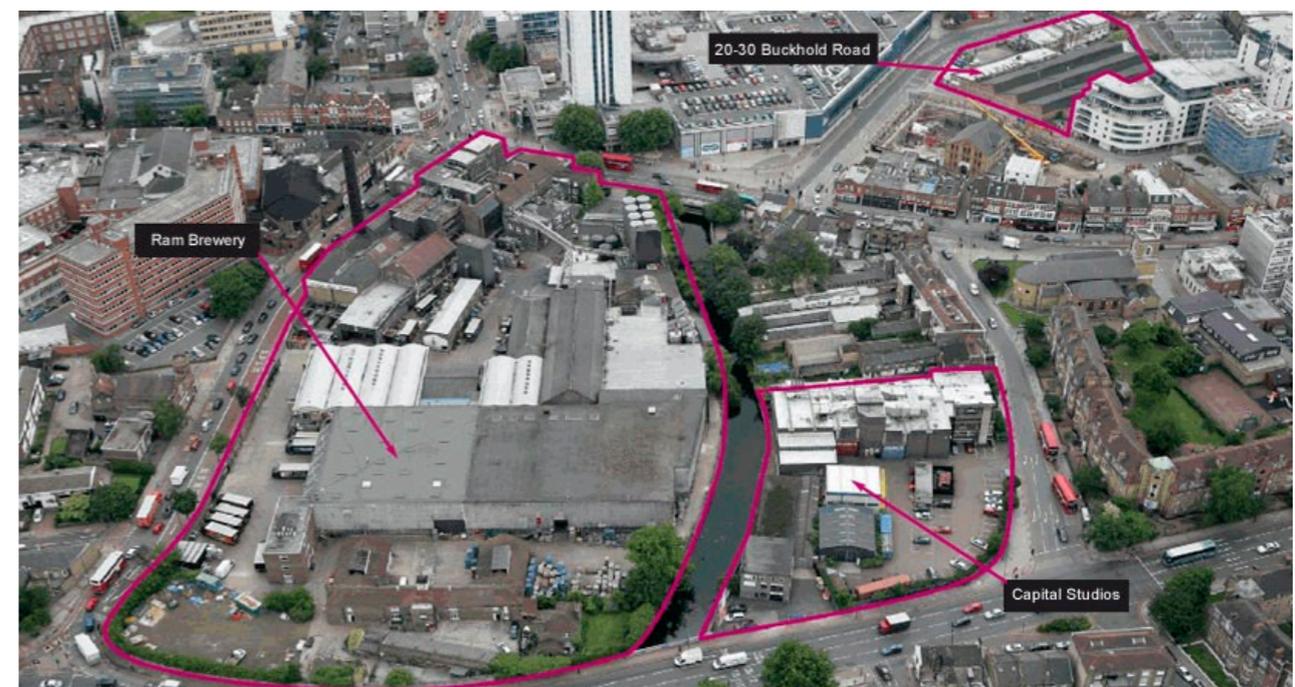
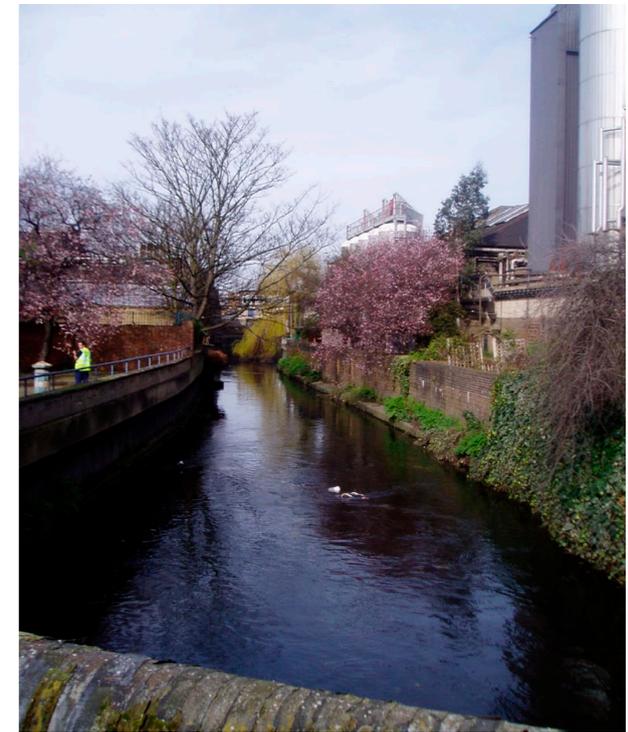
- Creation and improvement of tidal habitat through the creation of intertidal terraces.
- New habitat creation and biodiversity enhancement landscaping, including roof gardens and nesting boxes.

Increased riverside recreation

- A new riverside walkway with three pedestrian bridges to create walkways and connectivity to upstream and downstream parts of the river; continuing the Wandle Trail for the whole community.

Sustainable design and construction

- 'Excellent' BREEAM rating.
- Code for Sustainable Homes Level 3 for residential units.
- Ground source heat pumps.
- Green roofs across the range of buildings – approximately 25,000 square feet of green roofs for ecological benefit across the site.
- Rainwater harvesting.
- Energy centre comprising a Combined Heat and Power and Biomass Boiler, overall providing a 32% reduction in carbon emissions.
- Estimated 90 to 96% reuse or recycling of demolition materials off site.



Good practice site 3

New Capital Quay, Greenwich – Galliard Homes

New Capital Quay is a major mixed use development including 980 housing units, retail stores, cafes and restaurants, offices, a crèche, a medical centre and museum, in order to create an active and sustainable community and environment.

The 6.6 acre site is located at the mouth of Deptford Creek and is adjacent to the River Thames which means the majority of the development looks out over water.

“The Environment Agency has worked closely with us and the client, Galliard Homes, during design and construction to integrate this major urban regeneration project with the renewal, upgrade and enhancement of over 500m of river wall. Working in partnership with the Environment Agency’s experts in planning, ecology and civil engineering we will leave a legacy of an enhanced, sustainable flood defence and an improved public realm, as a part of the regeneration of this key site in the heart of Greenwich.”

Patrick Hayes, Director, Walsh Associates



Good practice site 3

New Capital Quay, Greenwich – Galliard Homes

Flood risk management benefits

- 500 metres of renewed defences protecting the site and the surrounding area from tidal flooding.
- 408 cubic metres of additional flood storage provided.
- Set back of flood defences included to create and improve operational access.
- Improved aesthetic values of the river frontage with a variety of materials used such as wood, concrete and steel.

Land decontamination and brownfield land regeneration

- The western area of the site was a gas works with a ship building yard, warehouses, wharf and dock to the northeast. All of these uses created contaminated land which needed to be treated.
- Approximately 2.2ha of land has been remediated with a significant proportion taken away by barge which has the effect of reducing lorry movements.

Habitat and conservation value

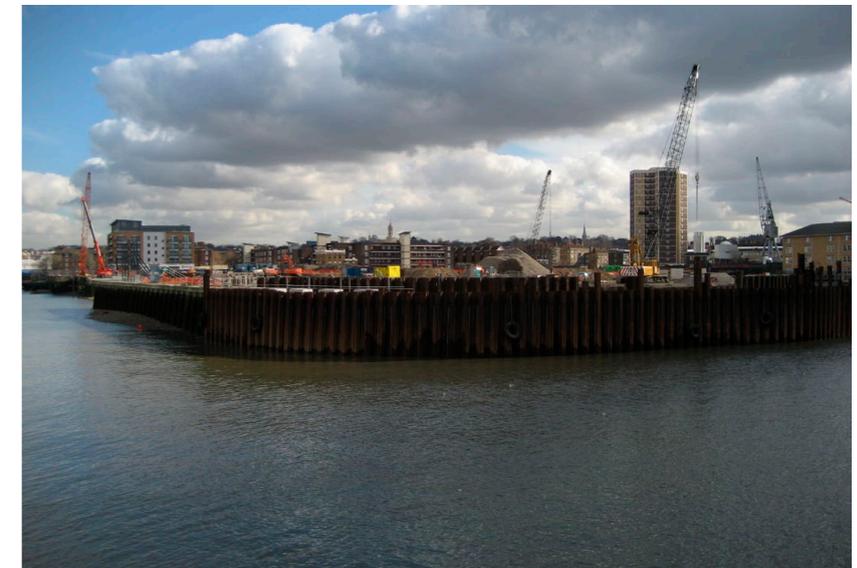
- New set back intertidal terraces as part of new river walls for fish and other wildlife to thrive.
- A landscape management plan is in place to ensure habitat and conservation design for the site is maintained for the longer term. It incorporates a brand new public open space with native meadow planting and ‘living walls’ for vegetation on some surrounding vertical structures. Wildlife features will be included into the landscape design such as nesting habitats and insect habitats.

Increased river recreation

- The development will provide regenerated public realm by enhancing the river frontages and the river walk. This will improve connectivity and linkages between the local communities and the water frontage.

Sustainable design and construction

- Green roofs will be built on the majority of the buildings. The current designs are for biodiversity roofs with different landscape features for each one to attract different flora and fauna. The particular focus will be on attracting rare and native species.
- The site is on course for Eco-homes ‘Excellent’ status.



Good practice site 4

Greenwich Peninsula – Greenwich Peninsula Regeneration Ltd

Greenwich Peninsula is a 190 acre development site and is therefore London's largest regeneration scheme.

The mixed use development consists of 10,000 new homes, 3.5 million square feet of office space – a brand new business district for London, with over 150 shops and restaurants.

The site is being developed in phases/plots in line with the overall masterplan produced by Terry Farrell and Partners.

Many of the features incorporated at this site are being used as good practice with other developers across London.



“GPRL is aspiring to push the boundaries of sustainable development. By working with partners including the Environment Agency, we are delivering market leading buildings and public realm that is sustainable in the local Greenwich environment.”

Andrew Storey, Joint Chief Executive, Greenwich Peninsula Regeneration Ltd



Good practice site 4

Greenwich Peninsula – Greenwich Peninsula Regeneration Ltd

Flood risk management benefits

- 1.7km of replaced and refurbished flood defences already in place on the eastern side of the peninsula, with a further 700m proposed on the western frontage.
- The intertidal terraces provide valuable habitat for fish and other animals and birds, as well as creating a new landscape feature for people to enjoy.
- Flood defences designed to protect from tidal flooding with an allowance made for the future effects of climate change.
- Surface water flood risk reduction on each plot will be provided in line with the London Plan policies.

Land decontamination and brownfield land regeneration

- Former uses including gas works left the site heavily contaminated.
- The site had one of the most extensive contamination remediation exercises ever carried out in the UK.

Habitat and conservation value

- 850m intertidal terracing for habitat creation, salt marsh, timber fenders and areas of newly planted habitat.
- Green piers retained and turned into ecological features.
- Incorporation of a continuous buffer zone of widths between 10m and 50m. This also allows for access to the flood defences.

Increased riverside recreation

- 19 hectares of new public open space including a new central public park.
- 2.2km of riverside walkways along the Thames path with increased amenity space, information boards and viewing platforms out over the river.

Sustainable design and construction

- There is a green roof Masterplan covering the whole site.
- Aspiration for the highest environmental standards for new buildings – Code for Sustainable Homes Score level 4 Design.
- BREEAM ‘Excellent’ rating achieved on the first commercial plot.
- Carbon footprint reduction – 41% below Building Regulation target.
- The designs will promote minimisation of waste and lower water demand. Rainwater harvesting has already been installed.



Good practice site 5

Brent Cross and Cricklewood – Brent Cross Cricklewood Development Partners

This 150 hectare site is located in the London Borough of Barnet and is cross cut by the River Brent. The development will provide a new town centre for Barnet with up to 7,500 new homes, new schools and community facilities and new and enhanced green spaces. Also, 1.5km of the River Brent will be restored and enhanced. The existing Brent Cross Shopping Centre will be transformed and 27,000 new jobs provided. A new train station and bus station will also be built.

This application is currently undecided and is at present, being considered by the Local Planning Authority (London Borough of Barnet).



“We have been working closely with the Environment Agency for many years as an integral part of our determination to create a new town centre that will set pioneering environmental standards and achieve a dramatic reduction in CO₂ emissions. This working partnership will ensure that a scheme which has been 10 years in the making is exemplary in its environmental performance.”

Jonathan Joseph, Brent Cross Cricklewood Development Partners



Good practice site 5

Brent Cross and Cricklewood – Brent Cross Cricklewood Development Partners

Flood risk management benefits

- Widespread adoption of a range of sustainable drainage techniques will achieve a 25% reduction in water runoff and the related flood risk.
- By making more space for water through river restoration, the development will also reduce flood risk.

Brownfield land regeneration

- The Masterplan Area of Brent Cross and Cricklewood is located within a highly urbanised part of north London. It will regenerate an area of predominantly brownfield land and includes a mixture of uses from industrial and commercial through to residential.

Habitat and conservation value

- At present the river is an undervalued asset within the community because water quality is degraded, the concrete channel restricts access, it is unappealing and pathways and crossings are perceived as unsafe.
- Through the development, 1.5km of the River Brent will be restored. The design accommodates both enhanced access points for people and dedicated wetland areas for wildlife.
- Ongoing monitoring, bioengineering techniques and specialist hydrogeological and botanical support will be used to ensure that positive ecological and flood risk benefits are realised.
- Two invasive species, Japanese Knotweed and Giant Hogweed, will also be removed as part of the development.

Increased riverside recreation

- The project seeks to promote community involvement and engender positive relationships between local people and the river.
- Designs include a new riverside walkway and areas of green space which will be further enhanced as part of the restoration scheme.
- New cycleways and pedestrian links will integrate the watercourse and river environment within the wider community.

Sustainable design and construction

- Sustainable drainage techniques will include green roofs, stormwater storage and permeable paving. These techniques will not only reduce surface water flood risk but will also improve water quality.



Good practice site 6

Woodberry Down – Hackney Homes

Woodberry Down is predominately characterised by 1940s and 1950s housing with 5–8 storey blocks made of reinforced concrete. This development will help regenerate the area into a sustainable community where people can live, work and visit and do not have to travel for basic needs.

Redevelopment will provide 4,664 new homes, 41% of which will be affordable. In addition there will be a number of facilities that will benefit the community including a new academy, a health centre, youth facility, business and adult training centre and a new community centre. New quality green spaces will be provided and the river corridor will be enhanced.

The vision is to transform the Woodberry Down Estate into a large, inclusive, sustainable community. It will be based on both respect for cultural, social and economic diversity and the recognition of common values. It will be a place where individuals acknowledge their responsibilities to a wider community and their commitment to the maintenance of a safe and healthy neighbourhood.



Good practice site 6

Woodberry Down – Hackney Homes

Flood risk management benefits

- Sustainable drainage systems will extensively reduce water runoff rates to mimic that of a greenfield (undeveloped) site. These will include green roofs, permeable paving and some stormwater storage areas.
- These principles were captured in a progressive design code that sets out detailed designs for each phase of the development.

Habitat and conservation value

- Over 2.4 hectares of public space will be provided. The new open space will incorporate bat roost features and nesting boxes. Invasive species will be removed and mature trees retained.
- A native planting zone will enhance the new river corridor and there will be an extensive provision for green roofs.

Increased riverside recreation

- The health of the community will benefit from new public walkways and cycleways and six major new green public open spaces including a ‘Neighbourhood Play Space’ and a riverside park.

Sustainable design and construction

- A number of new technologies will be adopted to ensure that the development is sustainable, including energy centres strategically dispersed throughout the area and integrated neighbourhood Combined Heat and Power system. Minimum BREEAM ‘Very good’ Eco-homes rating will be achieved.
- Waste will be managed sustainably through site waste management plans. During construction the majority of excavated material will be reused on site, and enhanced recycling facilities will encourage the occupants to recycle.
- Water savings appliances and management systems will be used to reduce water consumption and district cooling for non-residential buildings will be provided from ground water and the reservoir.
- An example of sustainable management can be seen in the construction of the first block. 3,500 tonnes of brickwork from a recently demolished building will be crushed and re-used to create aggregate for piling mat and backfill on the first construction site.



Good practice site 7

New South Quarter, Croydon – Barratt Homes

New South Quarter is a mixed use development in the centre of Croydon. It will deliver approximately 796 residential units, several commercial units and additional community uses such as a nursery, a medical centre, cycle paths, footpaths and new access to the adjacent Wandle Park for the site and the wider area. The River Wandle runs hidden from view through the site in a deep concrete culvert which is inaccessible to everybody.

One million pounds was secured within the ‘Section 106’ agreement associated with the development. This will be used for a river restoration and park enhancement scheme in the adjacent Wandle Park. The agreement also includes a maintenance programme for the restored river channel on the development site.



“Barratt Homes is fully committed to building sustainable homes whilst preserving, protecting and enhancing the local habitat and making the most of its natural features. The restoration of the River Wandle and the decontamination works have been carried out in conjunction with the Environment Agency and their help has been invaluable.”

Nick Fenton, Managing Director for Barratt Kent



Good practice site 7

New South Quarter, Croydon – Barratt Homes

Flood risk management benefits

- 280 metres of the River Wandle to be opened up and naturalised with increased set back between the development and the river.
- Increased space for water in the channel in line with Government policy.
- 1,266 cubic metres of surface water storage has been provided including an allowance for future effects of climate change such as more intense rainfall.
- Surface water drainage rates into the river will be greatly reduced to that of an undeveloped piece of land (known as ‘greenfield rates’).

Land decontamination and brownfield land regeneration

- As the site of a former gas works, there have been many challenges to overcome, such as decontaminating and remediating the soil.
- As part of the planned regeneration of this brownfield site, Barratt Homes and their consultants, WYG Environment, worked with the Environment Agency and Croydon Council to develop a sustainable remediation strategy that addresses contamination risks to the River Wandle, and other sensitive areas surrounding the site. Remediation measures included the construction of a ‘Permeable Reactive Barrier’ system to clean contaminated groundwater as it flows through the site. Soil materials from construction have been treated on site to promote reuse and minimise the need for disposal to landfill.

Habitat and conservation value

- Baseline ecological surveys identified limited opportunities for protected species to inhabit the site. Areas of the site were also infected by Japanese Knotweed.
- As part of the regeneration of the site, Barratt Homes developed a wildlife enhancement strategy and landscape management plan to create new habitats (for example, nesting boxes, roosting posts, and open green space) to enhance biodiversity within the site. The open river channel will be landscaped sensitively with native species to provide river habitat and offer greater connectivity for wildlife with the adjacent Wandle Park. Japanese Knotweed will be removed during construction to prevent the spread of this invasive species.

Increased riverside recreation

- Creating an open river channel will create a new amenity space for the community and increase awareness of the River Wandle in a highly urban environment.

Sustainable design and construction

- Eco-homes rating of ‘Excellent’.
- Using renewable energy technology, the development at New South Quarter will achieve a 10% reduction in carbon emissions from predicted energy requirements. This has been achieved by a combination of a site-wide Community Heating System, partly-fuelled with locally sourced biomass woodchip, passive ventilation measures and high thermal mass construction.



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How we can work with you

If you are a developer, council, consultant or planning/architectural school and would like to talk to us about these sites and the types of environmental improvements we seek please contact us.

Email: enquiries@environment-agency.gov.uk

Tel: 08708 506 506 and ask for your local Planning Team

By working in partnership we can ensure new development creates better places for people and wildlife. We offer a pre-application service and actively encourage early discussions. We invite you to contact us with your proposals.

We have also produced guidance which is available on our website:

[Guide for developers](#)

[Green roof toolkit](#)

[Pre-application service](#)

[Sustainable drainage systems](#)

[Estuary edges](#)

[London River Restoration Action Plan](#)

[Making space for water](#)

[Climate change, adapting for tomorrow](#)

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Glossary of terms

Green roofs – roofs which are designed to be ‘living’ either for people or wildlife. For example planting and roof top gardens.

Land decontamination – removal of contamination following industrial land use, for example former factories, oil storage and warehouse sites.

Pre-application – discussing designs before finalising plans to ensure environmental improvements are maximised.

River restoration – ensuring new development maximises improvements to urban rivers. For example removing concrete and introducing natural planting.

Riverside access – improving potential for people and wildlife to have access to riverside corridors for example for walking, cycling, fishing and relaxing.

Sustainable drainage systems (SUDS) – makes environmental quality and people a priority in drainage design, construction and maintenance. The SUDS approach includes measures to prevent pollution, reduce surface water runoff at source and provide a range of physical structures designed to receive the runoff.

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