

Beam Parklands

Green Infrastructure Case Study

Using flood management as a catalyst to create an attractive, biodiverse community asset that reconnects people and nature

NATURAL
ENGLAND

A multi-award winning space, Beam Parklands demonstrates how a green infrastructure approach can not only enhance a site's primary function as a flood defence, but create high-quality wildlife habitat. What's more, by involving communities from the start, the design of the park has focused on creating a local asset where people can interact with the wetland environment and the species within it.

Snapshot

- Created a large multifunctional green space that will deliver improved flood storage to help adapt to climate change.
- Created a safer and better used high- quality greenspace on people's doorsteps
- Protected and enhanced existing biodiversity by adding 12 ha of habitat that will benefit great crested newts, water voles, and reed buntings among others
- Provided new routes that link fragmented communities across South Dagenham for the first time
- Awarded the Chartered Institute of Water and Environment Management's (CIWEM) Living Wetlands Award in recognition of the environmental benefits the project has achieved

Key facts:

- Size of Beam Parklands: 53 ha (130 acres)
- Size of UK BAP habitat created: 12 ha (29 acres)
- Length of restored River Beam and Wantz Stream: 2km
- Additional flood storage within Washlands: 30,000m³
- Size of new paths created: 8km
- Park owned by the Land Trust and sustainably managed by endowment funding
- Key partners include The Land Trust, Environment Agency, Natural England, London Borough of Barking and Dagenham, London Borough of Havering, Arup, Design for London

Key environmental functions:

- Connecting and enhancing biodiversity habitats
- Creating opportunities for people to engage with the natural environment
- Promoting opportunities for recreation and play
- Remediating unused landfill sites
- Improving flood-water management
- Adapting to climate change



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Involving the community has allowed people to interact with the environment

Introduction

Beam Parklands is a new multifunctional wetland park for east London that sits on the floodplain of the River Beam – a tributary of the River Thames that forms the boundary between the London Boroughs of Barking and Dagenham and Havering. It officially opened in July 2011 and, at 53 ha, it marks a new beginning for a historic site stranded amidst the industrial and residential legacy of the old Ford works in an area deprived of high-quality open space. The site of Anglo-Saxon and medieval settlements, the new park creates a sense of place as part of modern London and its communities .

Prior to the creation of Beam Parklands, the site had functioned as an Environment Agency flood storage reservoir, protecting local homes, schools and businesses including Barking Power Station. It was during two initial projects to upgrade the reservoir's sluice structure, refurbish flood embankments and increase the flood storage capacity of the site, that the Agency's National Environmental Assessment Service (NEAS) identified the potential for a more ambitious scheme. The NEAS commissioned its landscape architects to undertake a detailed appraisal of the River Beam's extensive but degraded floodplain, and to produce a concept plan for an enhanced wetland landscape that would inspire local communities, funders and partners.

The site appraisal revealed an exceptionally biodiverse, semi-natural and attractive site that was both unvalued and poorly used by local communities at South Dagenham and Mardyke. The NEAS recommended that in order for the project to be sustainable environmentally, socially and economically, it would need to extend beyond the floodplain into land owned by the London Borough of Barking and Dagenham. By setting the project within a wider context, ecological habitats could be enhanced and connected, spoil excavated from the floodplain could be reused creatively close to its source, and the scheme could attract funding from a wider number of partners.



Location map and masterplan for Beam Parklands

As the Environment Agency did not have the in-house expertise nor the resources to fund the complex management of the floodplain, the Land Trust joined the project and took on the long-term ownership of the site. It successfully secured capital funding from a number of partners to enhance the site's existing green infrastructure, as well as an endowment to manage Beam Parklands as an attractive, multifunctional community asset for the future. The Land Trust subsequently took on the increased liabilities and associated costs for maintaining the park from the London Borough of Barking and Dagenham, while the Environment Agency has retained ownership of all flood-risk management infrastructure across the site.

By providing wildlife-rich corridors that connect the River Beam to its surrounding green spaces and bring local communities closer to the water and nature, Beam Parklands delivers a critical part of the East London Green Grid, now expanded to the All London Green Grid (ALGG). This recognises that 22 percent of east Londoners do not have access to a regional park and that a third of east London does not have a local park within 400m of people's homes. The aim of the ALGG is therefore to create a network of interlinked, multi-purpose open spaces with good connections to the areas where people live and work, as well as to the Green Belt and the Thames.

Beam Parklands, like other key projects being implemented as part of the ALGG, illustrates what can be achieved by investing in the functionality of London's river corridors. By using green infrastructure to regenerate brownfield land and help surrounding communities adapt to climate change, it also fulfils an important aim of the London Riverside Regeneration and Physical Development Framework, which promotes the provision of natural flood water management that will also "achieve valuable habitats and an attractive environment for living and working".

Designing a functional landscape that enhances existing wildlife habitats

Before the project began, Beam Parklands was already an ecological haven for a number of protected species, such as water voles, great crested newts (the site was once recorded as having the largest population of great crested newts in London) and a wide variety of wetland birds. A successful design approach would need to integrate these valuable species and their habitats, so it was critical that in-house experts in environmental design at the Environment Agency worked effectively with the project team, project partners and framework consultants. The early production of a well-developed concept plan for the site was an essential tool for communicating the vision and facilitating engagement.

In order to deliver the necessary improvements to flood-water management and therefore best value for money, the project focused on the floodplain. Around 30,000m³ of additional flood storage was created through excavation to reduce the risk of flooding to 400 homes, local businesses and Barking Power Station. At the same time, part funding from the Environment Agency was made available for the creation of 12 ha of UK Biodiversity Action Plan (BAP) priority habitat, and a detailed site appraisal by landscape architects, ecologists, geomorphologists, engineers and archaeologists determined what habitat types were appropriate for different locations. This has included ponds, reedbeds, lowland fen and wet woodland within the River Beam floodplain and its tributary the Wantz Stream.



It is hoped that new secluded areas of marshland will significantly increase the numbers of wintering snipe, jack snipe and water rail. Species more tolerant of disturbance such as the reed warbler will thrive in new reedbeds close to where people walk and play. The open vistas across the lower floodplain are also important for making public access easier and making people feel safer.

New areas of marshland have been created to provide habitat for water rail

In addition, all of the excavated material has been reused outside of the floodplain. By capping the site with site-won low nutrient ballasts, 2 ha of acid grassland has been created, as well as 1000m of hedgerows and 0.5 ha of traditional orchards (all UK BAP priority habitat). All of this is set within a design encompassing wildflower meadows, woodland copses, and scattered tree and shrub planting. Some of the historic features of the park have also been innovatively reused, with a World War II pillbox being converted for a bat roost.

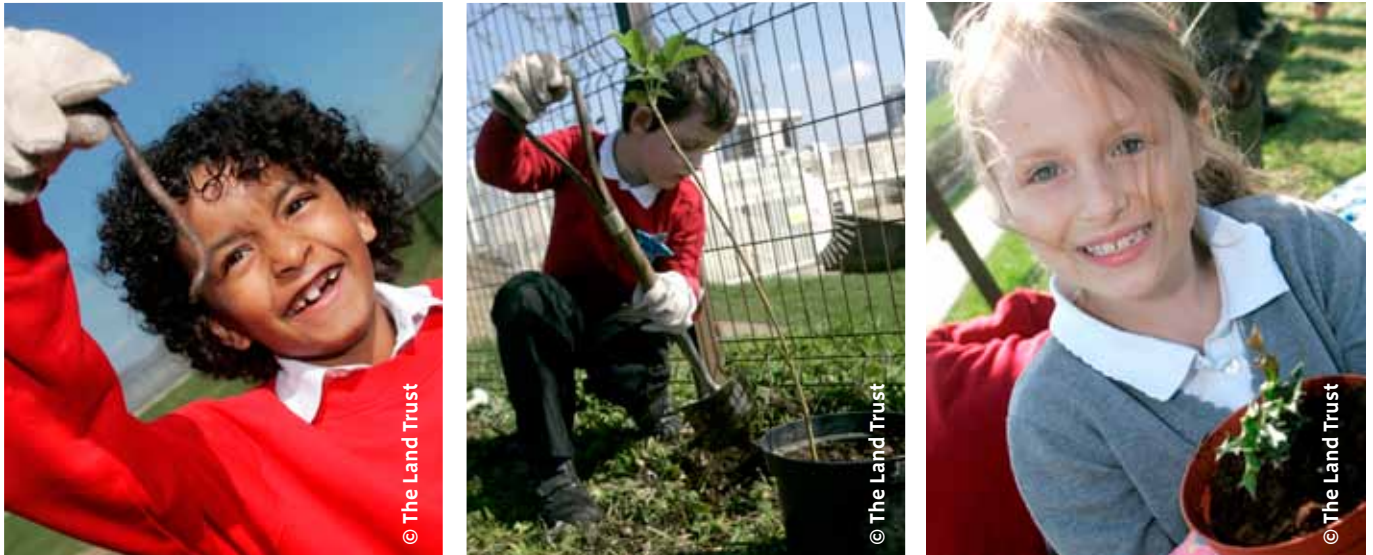
The project has also included re-meandering 150m of the Wantz Stream, re-profiling around 600m of the River Beam banks and installing in-channel features along a 300m stretch. A blockstone weir was installed in the Wantz Stream, which has the dual function of encouraging greater colonisation by reeds upstream and generating more gradient downstream for a fast flowing, sinuous watercourse that is attractive for people and with banks designed to encourage water vole. Backwaters have also been created on the rivers to improve their suitability for fish.

Encouraging ownership of the park by involving the community in design

By involving the community from the start, the design of Beam Parklands has focused on allowing people to interact with the wetland environment and species within it. Before the project, the Land Trust led the preparation of a consultation strategy that ensured key stakeholders and representatives from the community, were engaged in the park's design. The key objectives were to communicate the intrinsic value of open space and the potential for enhancing the environment, understand the aspirations of those who use the park, engage children and their parents in natural play and sports activities, and to engage schools and businesses in exploring opportunities for improving the lives of their students and employees. Public consultations were held throughout the spring of 2009, which all fed back into the park's design.

New entrances at the north, south and west of the park, together with 8km of pathways – of which 4km are suitable for cyclists – and a footbridge over the River Beam, have helped to link communities at Dagenham Village and Mardyke Estate in Rainham once fragmented by the site. Natural playgrounds have been created using spoil excavated from the floodplain and natural logs at the Leys Estate, and three new viewing points have been created at the Wantz Stream, overlooking the playing fields and on the old hospital site.

Tree planting has been designed to mimic natural woodlands and a mix of ponds have been designed with the public's enjoyment in mind – secluded water bodies allow for good views of wildlife, while others with shallow gravelly beaches make it safer for children to get close to the water. Two new community orchards have been integrated in the north east and north west of the park as a result of public feedback. Local people with horticultural skills are being invited to help establish them under the supervision of the specialist planting contractor.



School children have been engaged in the management of the site

Lessons learned from how good multifunctional design benefits people and wildlife

In 2011, Beam Parklands was awarded the Chartered Institute of Water and Environment Management's (CIWEM) Living Wetlands Award in recognition of the environmental benefits the project has achieved. That same year, it also won the Brownfield Award for 'Best Use of Brownfield Space'. From the outset, the scheme was designed according to quality greenspace standards and sustainable principles, with the aim of delivering multiple benefits from a single open space. This sustainable approach also guided the construction of the park, so that all excavated material from the floodplain was reused on site and, in many locations, habitat creation focused on natural regeneration so that the import of plant material – and therefore the risk of infection by invasive species – was kept to a minimum.

The Beam Parklands Partnership Project was funded by over £1.5m from the European Regional Development Fund and £0.5m from the Environment Agency. The partners were able to secure a contribution of £250,000 from Veolia Havering Riverside Trust through landfill tax credits for a local needs scheme. Further funding (£174,000) has come from the Big Lottery Fund 'Access to Nature' grant, which is run by Natural England, and is focused on ensuring that the community get the maximum benefit out of the new park. The grant has provided the resources to improve links between people and the park, including funding a park ranger for two years to lead community-building events and activities. Introducing active management of the site alongside its physical re-creation has been vital to its success, as well as to creating public confidence in the park.

A Sustainable Future

Under the ownership of the Land Trust and thanks to an inventive funding model, the Parklands long-term future is assured. An endowment fund of £1.9m was secured from the Homes and Communities Agency's Parklands allocation for the then East London Green Grid. This endowment has been added to the Land Trust's investment portfolio and the interest earned on this investment covers the maintenance of the Parklands in perpetuity. Over the long term, an endowment is proven to be much more cost effective than a lower-cost exit strategy on day one. Basically all future maintenance and repairs, thousands of community events and educational activities for generations of children have been taken care of with this one-off deal. This solution offers a clean and sustainable exit from the land for the Environment Agency and the London Borough of Barking and Dagenham (the previous land owners) removing their maintenance liabilities and protecting the money invested in creating the space.

The Land Trust has appointed a managing agent, which will take on full responsibility for the site for the next 100 years in late 2013. As well as taking care of the day-to-day maintenance of the site and its habitats, community liaison will be at the core of its responsibilities and it will also be required to actively source additional funding streams to ensure that the park continues to develop new facilities and fulfil its potential.

This case study is dedicated to Valerie Woodfield, who was The Countryside Agency's Lead Adviser for greenspace in East London, between 2000 and to 2006. Valerie was highly valued for the support she gave to green space partnerships, especially the Thames Chase Community Forest, and for her help in delivering the vision for high-quality green space in and around towns and cities, of which the Beam Parklands is an excellent example.

For further information

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