



Green Lanes Rain Gardens Submitted by The London Borough of Enfield

Awards category

Regeneration and retrofit – small scale (less than one hectare)



Lead or collaborating organisation(s)	The London Borough of Enfield
Location of SuDS	Green Lanes south of the North Circular Road (A406) from Sidney Avenue to Kelvin Avenue around postcode N13 6JU.

1. SuDS overview

SuDS components used	Raingardens	
Size of the scheme and its local context	The scheme has converted 340m ² of impermeable footway into raingardens on a section of Green Lanes approximately 100m south of the A406. The raingardens cover an 150m stretch from Sidney Avenue to Grenoble Gardens. Green Lanes is a busy main road running north- south from Enfield into Haringey. This area of Green Lanes has a local high street character with a variety of commercial premises such as local shops, cafés, pubs and restaurants as well as community spaces. Residential streets run directly off to the east and west.	
Approximate age of scheme (years)	Less than 1 year	
Benefits of the scheme	 Manages local highway flood risk Manages flood risk for 12 local properties Promotes healthier streets (TfL) Provides urban greening Provides biodiversity hotspot Improves water quality Helps urban cooling Provides cycle stands Bring the community together 	
Briefly describe the scheme	The scheme involved constructing 19 raingardens on Green Lanes, south of the A406, between Sidney Avenue and Kelvin Avenue. The raingardens were created by converting existing paved surfacing into green planted areas. These sustainable drainage features (SuDS) help to reduce flood risk by storing rainwater during periods of extreme rainfall and thereby relieve the pressure on the underground drainage system. The rain gardens also filter out pollutants which improves the quality of water discharging into Pymmes Brook. The SuDS features also enhance the public realm by providing greening and creating biodiversity hotspots. This section of Green Lanes is prone to flooding due to local topography and the lack of capacity in the local drainage network. A flood modelling study found that providing raingardens and creating a new large overflow to the surface water sewer will protect 12 local properties for an extreme flood event. The SuDS proposal will also reduce flood risk to the local road network which is particularly significant as Green Lanes is a key transport link, it is a bus route and a principal road, and a high street with many shops and other businesses.	

2. SuDS details

No	Question	Answer
1	What difference has this scheme made to the local community or area?	The raingardens enhance local aesthetics by introducing green spaces, improving air quality, and promoting biodiversity. These features also mitigate flood risk by absorbing and managing stormwater, easing pressure on drainage systems. Green SuDS contribute to climate resilience by moderating temperatures and sequestering carbon.
		In the context of busy Green Lanes, where surface water pollution is evident, the raingardens play a crucial role. They filter pollution through the subbase, discharging cleaner water into the receiving watercourse. Additionally, the raingardens have encouraged active transportation among locals and drawn visitors to spend time in the area, fostering community engagement and wellness.
2	What is exceptional about this scheme beyond a standard approach?	We replaced 11 traditional road gully inlets with overflow gullies in rain gardens to promote infiltration, maximize storage, and relieve pressure on the drainage network. The project used a new subbase with higher porosity for increased water storage. Despite slightly higher costs, a cost-benefit analysis showed it was efficient in terms of price per cubic meter stored. Additionally, we installed a new large overflow drainage connection to a local trunk surface water sewer from a rain garden. Flood modelling predicts this will protect up to 12 homes from severe flooding, allowing rain gardens to handle day-to-day events effectively.

3	How much work went into getting this scheme realised?	The project was completed in March 2024 and was in the making from 2021. Every step of the project was completed in house, except for flood modelling which was outsourced. The feasibility assessment involved two phases of hydraulic modelling studies, on site investigations, multiple stakeholder and public engagement events and significant design and project management work.
		The scheme involved multiple funding sources two of which (Environment Agency and Thames Water) involved significant Business Cases to be completed which was all done in house. Due to limited council budget the scheme was fully funded with external funding.
4	Is this scheme part of a masterplan or integrated into other initiatives?	This scheme was carried out as part of a masterplan integrating activities across Green Lanes critical drainage area. The intention is to deliver multiple SuDS projects throughout this catchment over several years, gradually altering the hydrology and contributing to reduced flood risk to commercial and residential properties in area. It was also completed in partnership with nearby Lower Traffic Neighbourhoods delivered by a separate council team (Journeys and Places).
5	What value does this scheme provide to the local area and beyond?	Green SuDS features instil a sense of pride and ownership within the community. Residents value these sustainable amenities as they contribute to a healthier and more attractive neighbourhood. People appreciate the opportunity to connect with nature in urban settings, fostering a greater sense of well-being and community cohesion. They also attract more people to visit the area which helps local businesses and creates a local pride in the area.

6	What challenges/problems needed to be addressed to realise this scheme?	A survey identified significant buried services in the area. Trial pits during the feasibility stage helped select optimal construction sites and adjust designs to maximize storage. Some raingardens are on existing raised buildouts, posing challenges due to limited freeboard storage. To address this, we raised and re-laid the footway, sloping it up to the raingarden edge for more storage. In areas with large raingardens on Green Lanes, we added crossing points for safe pedestrian access from parked cars. The construction was particularly challenging due to heavy traffic on the road, requiring careful planning to minimize disruption and ensure worker safety.
7	How does the scheme address related issues such as water scarcity, nutrient neutrality, or biodiversity net gain?	The raingardens address water scarcity by capturing and storing rainwater, reducing the demand for potable water. They promote nutrient neutrality by filtering and absorbing pollutants like nitrogen and phosphorus from stormwater runoff, enhancing water quality before it reaches water bodies. Additionally, rain gardens support biodiversity net gain by incorporating native plants that attract pollinators and wildlife, creating green habitats in urban areas. By conserving water, improving water quality, and improving biodiversity, rain gardens contribute to more sustainable and resilient communities, mitigating environmental impacts associated with urbanization and climate change.

8	Is learning from the scheme continually captured and communicated? Please give examples.	Preconstruction we took learnings from early engagement with key stakeholders in the council which was vital in gaining important feedback on designs. Public consultation helped us put in important design aspects such as crossing points through large rain gardens and inclusion of cycle stands to lock bikes.
		Postconstruction, we produced a key consideration document from our learnings throughout the project to help for future larger SuDS schemes. Includes a step-by-step checklist of important project processes to tick off.
		We now plan to install rain garden signs to communicate about the new features to the public.
9	What approaches/measures are taken to ensure the scheme is properly managed and maintained?	SuDS are monitored regularly by residents and the design team. Schemes such as this have shown residents taking ownership therefore flagging issues and self-organised litter picking and general maintenance. The plants are under a two-year establishment period where they are de-weeded, litter picked, watered and replaced where required. The rain gardens are then automatically added to the Council's Green Assets Register and are thereafter maintained by the Council's Green Management team. The team have established a good working relationship and have a bespoke management programme for rain gardens and SuDS.
10	Have you collected any feedback on your scheme? What do people say about it? Can you provide any quotes?	We have received praise from local business owners, some of whom were sceptical on the scheme during the consultation phase but have since been keen to share their positive feedback. Local business owner Camal of The Truth café said: <i>"I'm really happy with new</i> <i>raingardens, they provide lovely colour to the</i> <i>area, they make the area feel and smell fresh</i> <i>and welcoming which is great for business</i> <i>owners. I feel they have improved the area</i> <i>massively".</i>

3. Supporting materials

Image (low resolution)	Caption	Image credit
	Before and after photos on Kelvin Road looking north at two rain gardens constructed on existing buildouts where surrounding footway levels were raised to provide more storage in the raingardens. Also shows one of 7 new cycle stands.	Before photo Google Street view, after photo Freddie Hambly- Barton

	Before and after photos looking north up Green Lanes and the northern side of Kelvin Avenue. Shows linear effect of rain gardens on the main road providing a green buffer for the road.	Before photo Google Street view, after photo Freddie Hambly- Barton
<image/>	Before and after photos looking west on Grenoble Gardens to Green Lanes.	Before photo Google Street view, after photo Freddie Hambly- Barton

	Looking south down Green Lanes at the beautiful flowering plants of the new raingarden. Bees can often be seen enjoying the flowers	Photo by Freddie Hambly-Barton
<image/>	Before and after photo looking northwest to Melbourne Avenue from Green Lanes. Shows a nice cluster of raingardens on the junction and two new trees to replace existing ones that were dying.	Before photo Google Street view, after photo Freddie Hambly- Barton

<image/>	Before and after photos looking south to Tottenhall Road from Green Lanes showing nice cluster of rain gardens on the junction providing significant greening to the area.	Before photo Google Street view, after photo Freddie Hambly- Barton
	Crossing through a raingarden provided where cars park and need to access the footway safely. There is s continuous subbase beneath the crossing to minimise storage loss.	Photo by Freddie Hambly-Barton

