



## **The Green Roof League Table 2023**

**Gentian Limited**

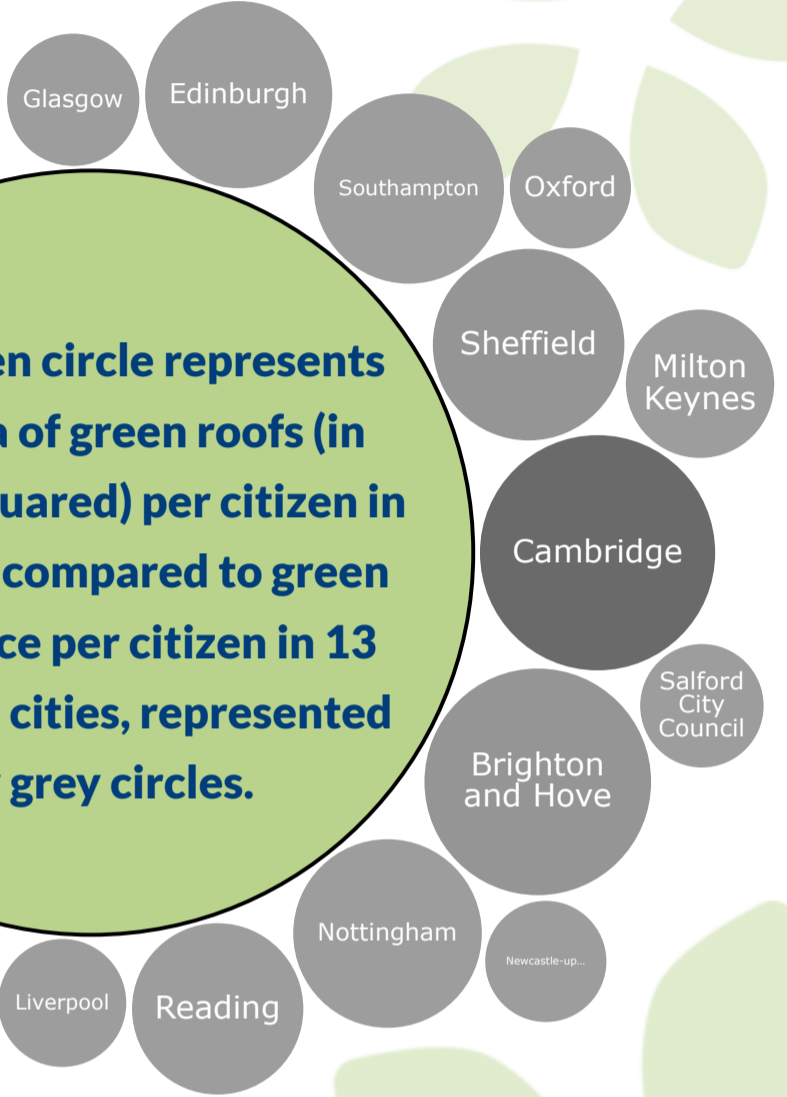
# Introduction

In 2020, Gentian, in collaboration with Livingroofs.org, undertook an assessment of green roofs installed in 2019 using remote sensing surveys to evaluate the distribution and extent of green roofs in urban areas throughout the UK. This comprehensive report covers the location, type, and size of green roofs across England, Wales, Scotland, and Northern Ireland and builds on the data created for the London area in 2017 by Livingroofs.org.

It is also the first of its kind, evaluating each urban area by Council, London Borough, or Combined Authority. This includes the Greater London Authority (GLA), West Midlands (WMCA) and Greater Manchester (GMCA). In comparison to other UK cities, London, along with several London Boroughs, demonstrated a higher number of installed green roofs - an achievement made possible by the implementation of a dedicated green roof policy since 2008 and now the Urban Greening Factor across London.



This green circle represents the area of green roofs (in meters squared) per citizen in the GLA, compared to green roof space per citizen in 13 other UK cities, represented by grey circles.



## THE UK LEAGUE TABLE

Intensive 

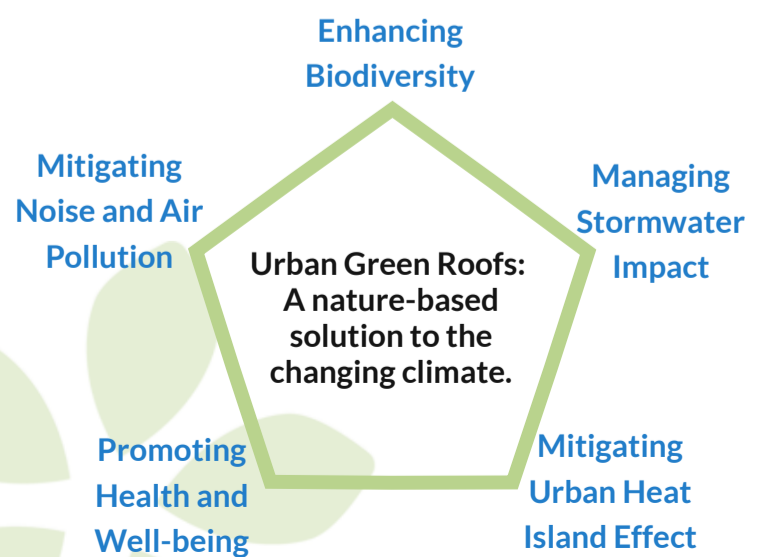
Extensive 

The UK League Table ranks cities by the area of green roof per citizen and indicates the proportion of intensive and extensive green roofs. Cambridge ranked second in the UK, after the GLA. Here the GLA is excluded from the comparison given its disproportionately high value, making Cambridge the leading city in the UK in this category after the GLA.

### Green solutions for a changing climate

Mapping urban green spaces is vital for gauging the resilience of the UK's urban areas against climate-related challenges. Green roofs are a key solution in this endeavour, aiding urban adaptation to climate change and fostering healthier lifestyles.

**Gentian** can map both green roofs and ground-level vegetation, providing essential insights into the state of urban nature. Furthermore, Gentian's green roof retrofit potential assessments help identify opportunities for installing green roofs with no structural uplift required.





# INTENSIVE and EXTENSIVE Green Roofs



Intensive green roof - London.



Extensive green roof - Salford.

## What's the difference?

**Intensive green roofs:** High maintenance and resemble parks and gardens.

**Extensive green roofs:** Low maintenance and can include sedum and wildflower carpet systems or biodiverse green roofs. Biodiverse extensive green roofs are likely to increase in England due to Biodiversity Net Gain (BNG) regulations, which prioritise this type over other extensive green roofs systems!

**Biosolar systems:** Extensive green roofs can incorporate solar systems by integrating or mounting solar panels on top.

London has a greater total area of intensive green roofs than all UK cities combined. Additionally, it accounts for 34% of the total area of extensive green roofs found across all UK cities.

Total area of extensive green roofs in all UK cities combined

Total area of intensive green roofs in all UK cities combined



## City of London



## Tower Hamlets



## Islington



## Greenwich



## Camden



## Hackney



## Westminster



## Barking and Dagenham



## Lewisham



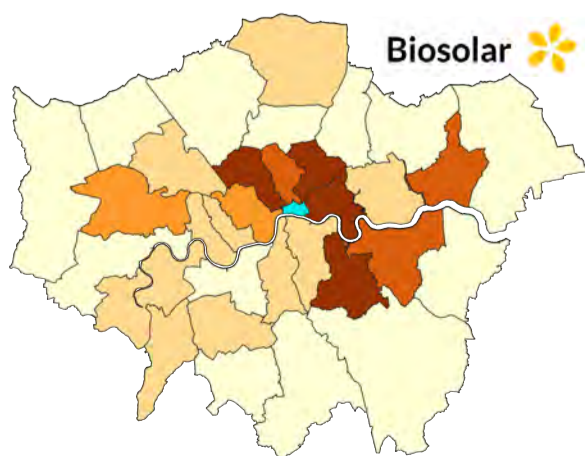
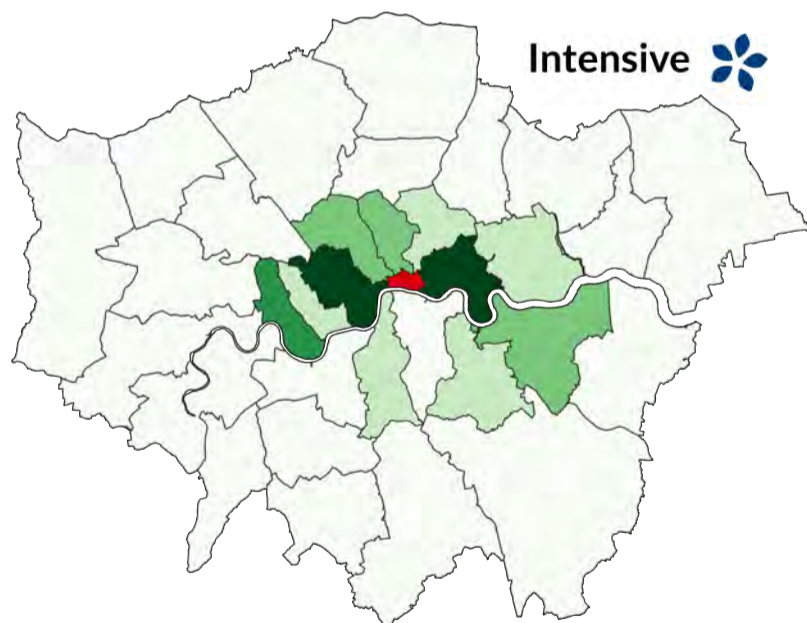
## Newham



## Hammersmith & Fulham



The graph on the left ranks 11 London boroughs with the greatest **green roof area in metres squared per citizen ( $m^2/pp$ )** for intensive, extensive, and biosolar green roofs. The City of London ranked first across all green roof types. In the maps below, darker shaded boroughs indicate greater  $m^2/pp$ . The City of London has been excluded from the maps as its small residential population makes it an anomaly.



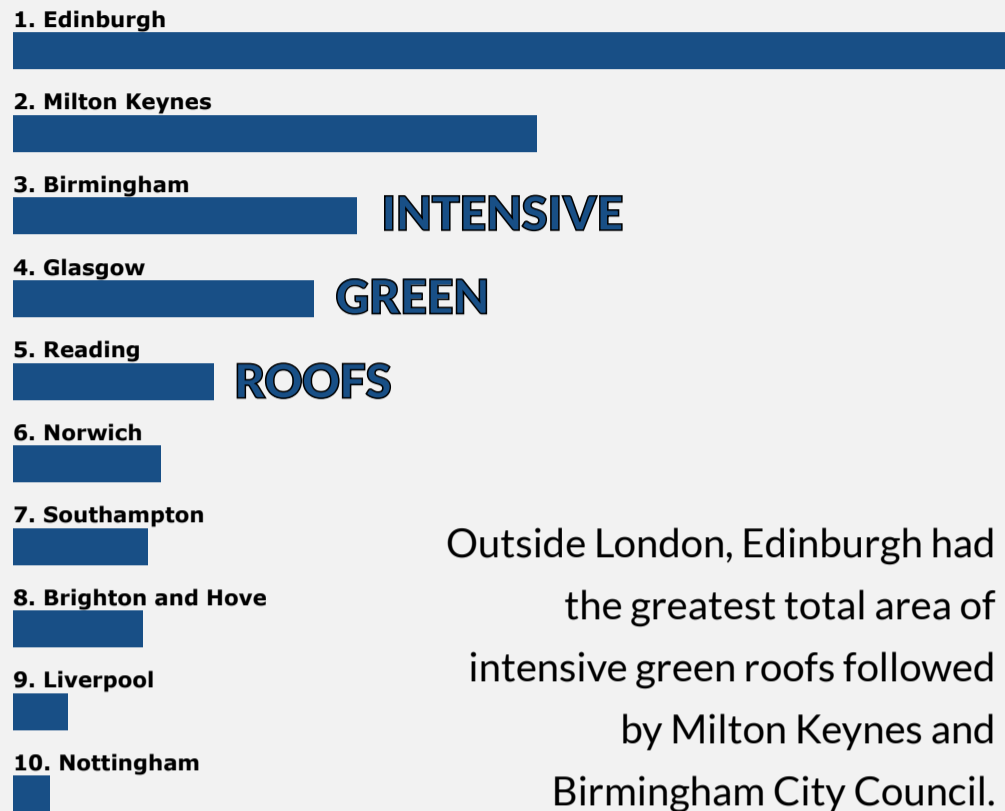
Outside the City of London, Tower Hamlets had the largest area of intensive green roof per citizen, followed by Westminster and Hammersmith & Fulham. In terms of extensive green roof area per citizen, Tower Hamlets also led, followed by Islington and Greenwich. Additionally, Tower Hamlets was the top borough outside of London for biosolar green roof area per citizen, with Hackney and Lewisham following.

# London

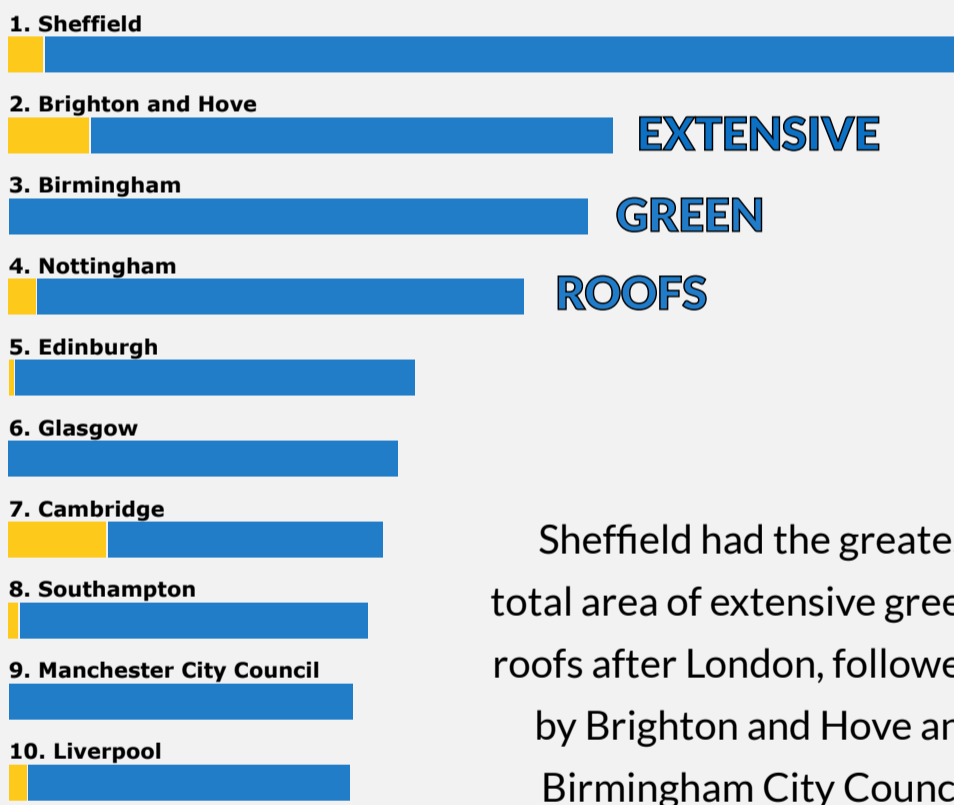


# UK Cities

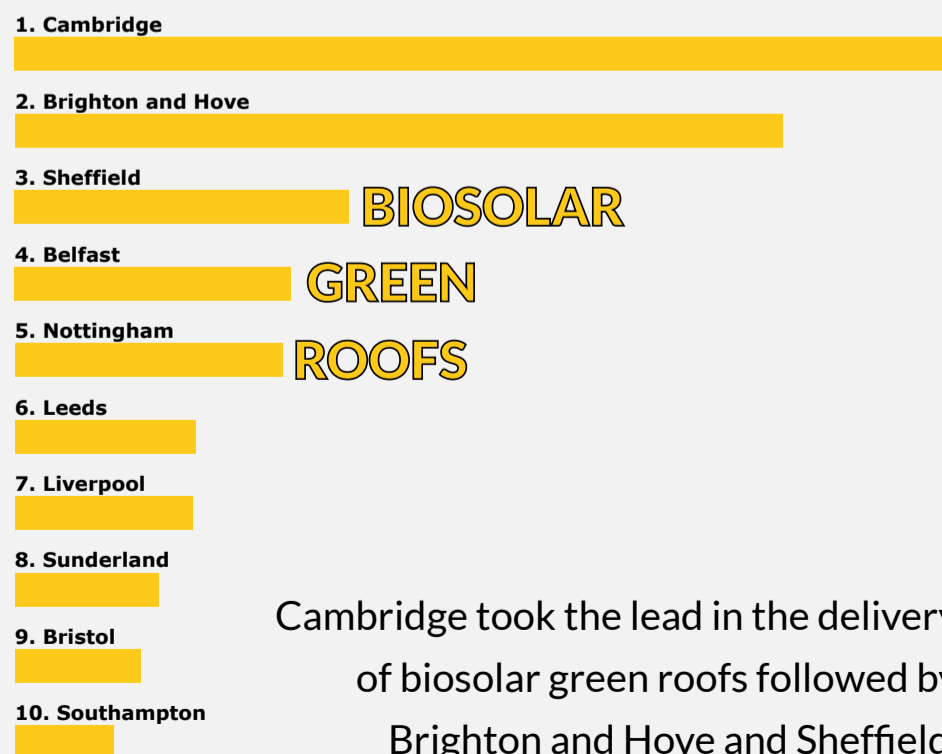
The following graphs rank cities outside London by the **total area of green roofs**. London is excluded given its disproportionately high area of intensive, extensive, and biosolar green roofs.



Outside London, Edinburgh had the greatest total area of intensive green roofs followed by Milton Keynes and Birmingham City Council.



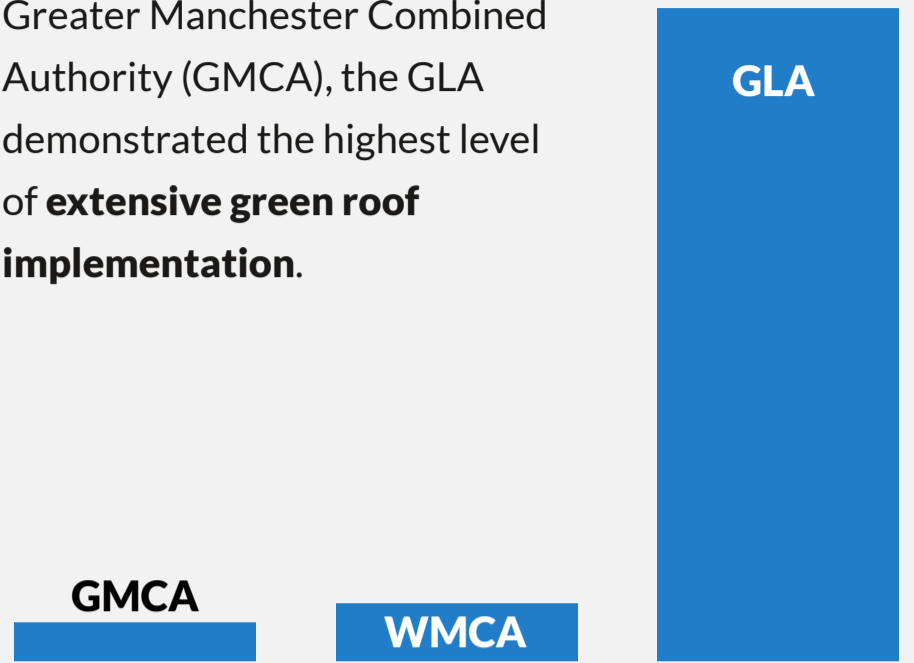
Sheffield had the greatest total area of extensive green roofs after London, followed by Brighton and Hove and Birmingham City Council.



Cambridge took the lead in the delivery of biosolar green roofs followed by Brighton and Hove and Sheffield.

# Combined Authorities

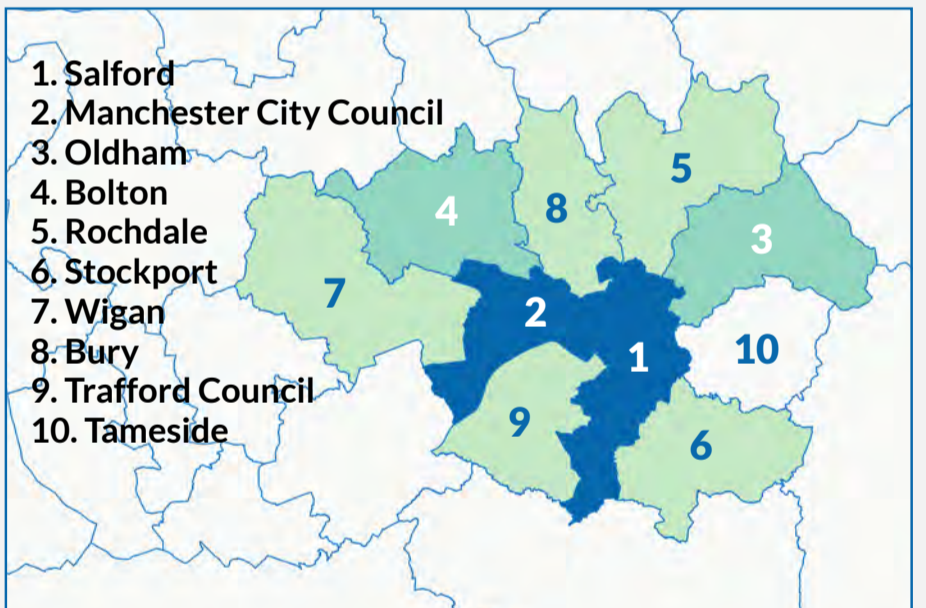
When comparing the Greater London Authority (GLA), West Midlands Combined Authority (WMCA) and Greater Manchester Combined Authority (GMCA), the GLA demonstrated the highest level of **extensive green roof implementation**.



The maps below display the ranking of councils within the GMCA and WMCA based on green roof area per citizen. Darker shades indicate higher values.

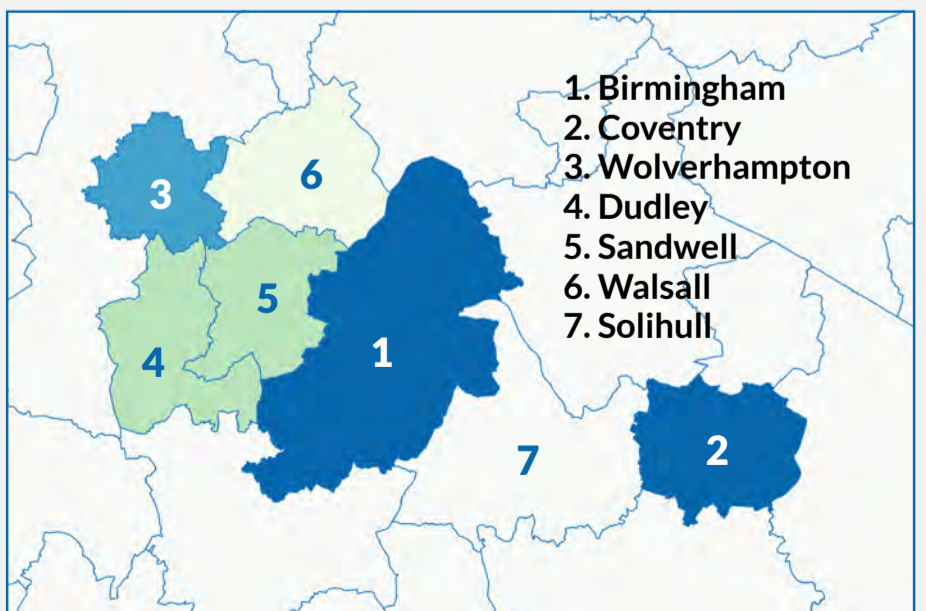
## GMCA

In the GMCA, Salford had the greatest area of green roof per citizen followed by Manchester City Council and Oldham.



## WMCA

In the WMCA, Birmingham had the greatest area of green roof per citizen followed by Coventry and Wolverhampton.





## Key Metrics in Our Report

In assessing the proliferation and impact of green roofs, our primary metric has been the area of green roofs per capita (square metres per person). This measurement effectively enables comparisons between cities or local councils. Based on this metric, we've updated our comprehensive dataset for the years 2016 and 2017. For a detailed view, refer to our original London borough analyses [here](#).

Moreover, we have incorporated the total area of various green roof types - intensive, extensive, and biosolar - in our assessment. This approach highlights cities and districts that are excelling in specific green roof implementations compared to their counterparts.

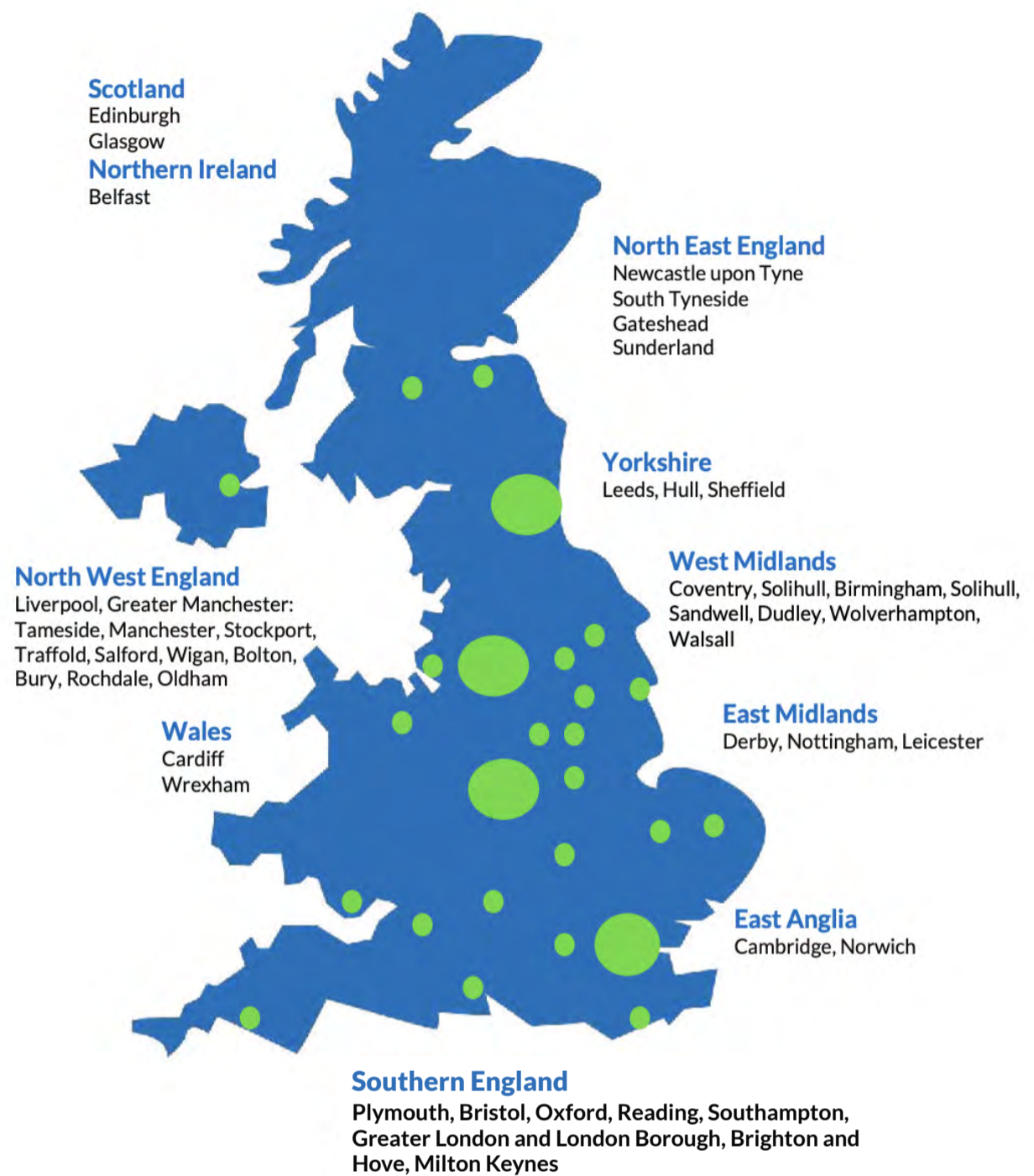


**Barnet**



**City of London**

## Areas assessed:



## Gentian's Role in Mapping Urban Green Infrastructure

Over the past two years, Gentian has expanded its green infrastructure assessment to include several new local authorities in the UK, in addition to those evaluated in 2020. These areas include Plymouth, Newport, Neath/Port Talbot, Swansea, and the London Boroughs of Sutton, Lewisham, and Hammersmith and Fulham. Our detailed case study on Hammersmith and Fulham ([available here](#)) offers insights into our methodology and findings, with more case studies on the way.

## Evaluating Biodiversity Net Gain (BNG)

In Lewisham, our focus extended to assessing how the borough's extensive green roofs align with Biodiversity Net Gain (BNG) criteria, categorising them as either 'Good' or 'Poor'. This aspect of our work is becoming increasingly crucial as BNG requirements take effect, and Gentian is poised to be a key player in this area.



## Comprehensive Analysis of Green Roofs and Retrofit Potential

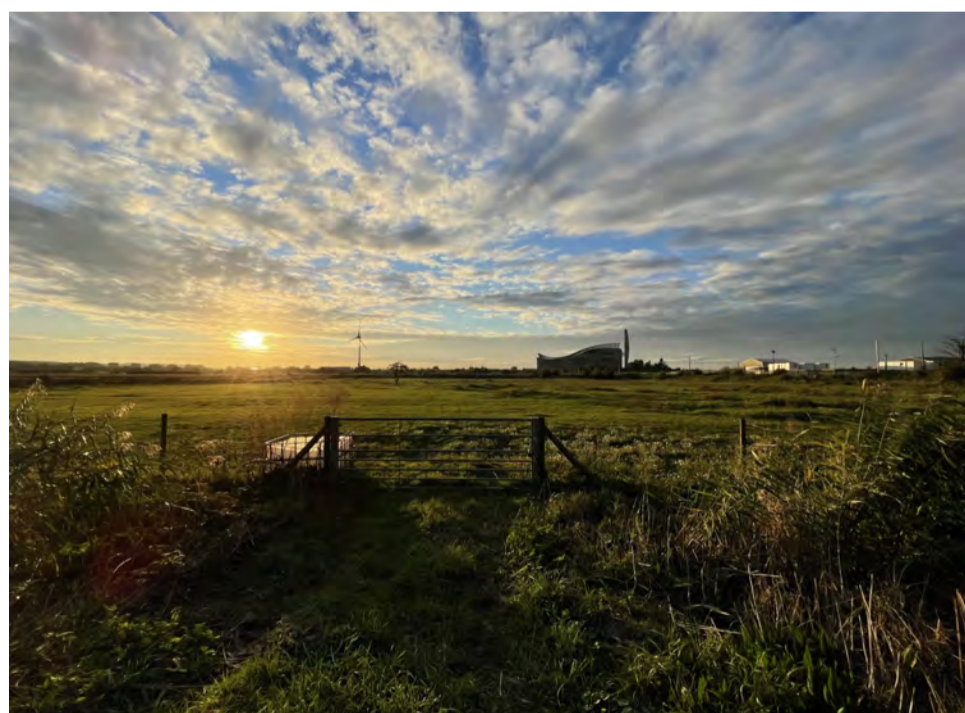
Our work with Hammersmith & Fulham offers a holistic view of green roof types, potential biosolar installations, and retrofit opportunities within the borough. This detailed analysis forms a crucial part of our service offering.



Greenwich

## The Future

Green roofs play a crucial role in transforming urban landscapes to better withstand climate change and in enriching urban biodiversity. At Gentian, we provide extensive services for the analysis of green roofs, evaluating their various types and the biodiversity they support. Additionally, we specialise in identifying retrofit opportunities in urban settings. Our expertise in remote analysis is not limited to the UK; it spans across the globe, enabling us to offer our services worldwide.



Thamesmead



Greenwich

## Mapping Private Property Portfolios

While our expertise has greatly benefited local authorities, we have also collaborated with major real estate entities like Grosvenor and Cadogan estates. Our analyses are vital for real asset and property companies, particularly for Environmental, Social, and Governance (ESG) reporting and the Task Force on Nature-related Financial Disclosures (TNFD).



City of London

## Engage with Us

To learn more about how Gentian can assist in enhancing your urban landscapes and enriching biodiversity, visit our website at [www.gentian.io](http://www.gentian.io). For inquiries or to discuss potential collaborations, reach out to us at [info@gentian.team](mailto:info@gentian.team). Together, let's shape a greener, more sustainable future.





**Precision Monitoring for Biodiversity**

**“The transformation to a nature positive future starts with data”**

**Gentian.io**

**info@gentian.team**