



CASE STUDY — LONDON BOROUGH OF RICHMOND

Mapping Urban Heat Risk and Cool Spaces for the London Borough of Richmond

Using high-resolution heat mapping to support climate adaptation and protect communities

INTRODUCTION

As London's climate continues to warm, extreme heat is becoming one of the capital's most significant climate risks. The GLA's recent [Heat Ready London](#) report warns that around one million London homes may already be at high risk of overheating, alongside more than 1,300 schools, 60 hospitals and 350 care homes located in high heat-risk areas. It also projects that London could experience two to three times as many heatwaves within the next 20 years.

Local authorities will play a pivotal role in responding to this challenge. Through their responsibilities for planning, housing, highways, parks and green infrastructure, public health and emergency planning, councils are uniquely placed to reduce heat exposure and protect vulnerable communities. However, targeting investment effectively requires a detailed understanding of how heat risk varies across neighbourhoods. High-resolution heat mapping can help councils identify the communities most at risk, prioritise interventions such as tree planting and cooling infrastructure, and build long-term resilience to a hotter future.

To help inform their decision making, the London Borough of Richmond commissioned Urban Heat Index to produce a detailed map of urban heat patterns across the boroughs. The project formed part of our pilot programme, designed to demonstrate how local authorities can use high-resolution heat data to inform practical decision-making.

OUR APPROACH

We produced a GIS-ready Urban Heat Index data layer using high-resolution satellite-derived temperature data combined with information on vegetation, terrain and the built environment. We held an inception meeting to understand how the council wished to use the data and to ensure the outputs would integrate with existing mapping systems and support local decision-making.

THE OUTCOME

The resulting dataset provides the London Borough of Richmond with a detailed picture of urban heat patterns across the local authority areas, as shown in the image below. The map shows those areas of the borough with a surface temperature that is hotter than the average of the borough's cool vegetated areas, broken down by 30m pixels.

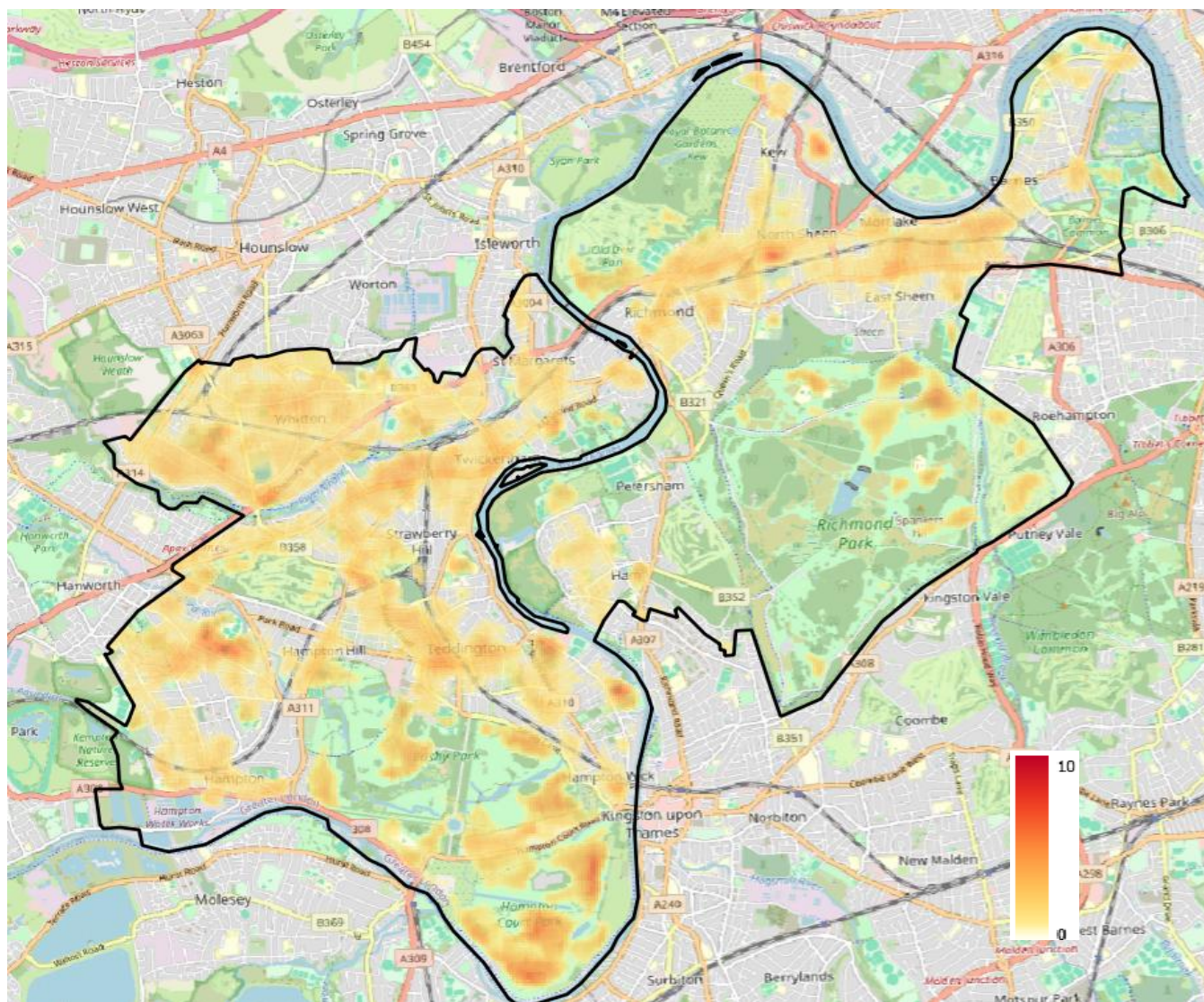


Figure 1 Areas of the London Boroughs of Richmond with a hotter surface temperature (degrees C) than the average of vegetated areas

The data can be used by the council to:

- Identify neighbourhoods with greatest risk of experiencing extreme heat
- Combine with information on vulnerable populations, housing and public assets, to inform the targeting of cooling interventions
- Support climate adaptation planning and funding bids

Because the data is supplied as a GIS layer, it can be incorporated into the council's existing mapping systems and used across multiple service areas.

LOOKING AHEAD

This project demonstrates how high-resolution urban heat mapping can provide local authorities with a practical evidence base for climate adaptation. By revealing heat patterns at the neighbourhood level, councils can make better-informed decisions about where to invest, helping to build healthier, more resilient communities.

URBAN HEAT INDEX

Urban Heat Index helps local authorities and other organisations map, understand and reduce urban heat risk through clear, evidence-based spatial data that supports planning, public health and climate resilience. Find out more via our website, or email us to request an introductory call.

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